

**Source:** T1  
**Title:** CR's to TS 34.123-1 v.5.5.0 for approval  
**Agenda item:** 5.1.3  
**Document for:** Approval

This document contains the CRs to TS 34.123-1 .5.5.0. These CRs have been agreed by T1 and are put forward to TSG T for approval.

<i>Tdoc #</i>	<i>Title</i>	<i>CR#</i>	<i>rev</i>	<i>Cat</i>	<i>Versi on in</i>	<i>Versi on out</i>	<i>Relea se</i>
T1-031390	New RRC test cases on Paging	602		F	5.5.0	5.6.0	Rel-5
T1-031425	CR to 34.123-1 R5; Delay between activation and deactivation of compressed mode in package 4 test case 8.4.1.43	614		F	5.5.0	5.6.0	Rel-5
T1-031442	CR 34.123-1 Rel-5: P3 TC 8.4.1.28 Measurement Control and Report: UE internal measurement for events 6F and 6G	617		F	5.5.0	5.6.0	Rel-5
T1-031443	CR 34.123-1 Rel-5: Removal of P3 TC 10.1.3.3.3 Incoming call / U9 mobile terminating call confirmed / termination requested by the user	618		F	5.5.0	5.6.0	Rel-5
T1-031453	General correction of CM TGD parameter	619		F	5.5.0	5.6.0	Rel-5
T1-031474	Correction to GMM P2 test case 12.4.2.2	624		F	5.5.0	5.6.0	Rel-5
T1-031475	Correction to GMM P4 test case 12.4.1.4c	625		F	5.5.0	5.6.0	Rel-5
T1-031488	Maintenance of low priority test case 11.2.1 Network initiated PDP context modification	592	1	F	5.5.0	5.6.0	Rel-5
T1-031494	Package 3 test case 8.3.2.11	628		F	5.5.0	5.6.0	Rel-5
T1-031496	Low priority test cases 8.2.5.4	630		F	5.5.0	5.6.0	Rel-5
T1-031498	Package 4 test case 8.2.1.26	632		F	5.5.0	5.6.0	Rel-5
T1-031499	Package 4 test case 9.5.7.1	633		F	5.5.0	5.6.0	Rel-5
T1-031500	Low priority test cases 8.2.3.26	634		F	5.5.0	5.6.0	Rel-5
T1-031502	Low priority test cases 8.3.1.29 and 8.3.1.30	636		F	5.5.0	5.6.0	Rel-5
T1-031503	Low priority test cases 8.3.1.26 and 8.3.1.28	637		F	5.5.0	5.6.0	Rel-5
T1-031512	Editorial Correction to RRC test case 8.3.2.13	640		F	5.5.0	5.6.0	Rel-5

T1-031525	Correction to clause 8.1.2.1 to match TTCN	644		F	5.5.0	5.6.0	Rel-5
T1-031531	Correction to TC 8.4.1.5 (Package 1)	647		F	5.5.0	5.6.0	Rel-5
T1-031577	Correction to RRC P1 test case 8.1.1.8	622	1	F	5.5.0	5.6.0	Rel-5
T1-031578	Correction to GMM Low Priority test case 12.4.3.3	642	1	F	5.5.0	5.6.0	Rel-5
T1-031582	Traffic volume measurement test cases	631	1	F	5.5.0	5.6.0	Rel-5
T1-031583	Package 2 test case 8.4.1.14	635	1	F	5.5.0	5.6.0	Rel-5
T1-031587	Corrections to RRC test cases affected by NAS timer T3317	607	1	F	5.5.0	5.6.0	Rel-5
T1-031599	Removal of session management test cases on QoS negotiation (Package 3+4)	603	1	F	5.5.0	5.6.0	Rel-5
T1-031630	Package 2 test case 8.4.1.7	638	1	F	5.5.0	5.6.0	Rel-5
T1-031631	New RLC test case on reconfiguration of RLC parameters by upper layers	601	1	F	5.5.0	5.6.0	Rel-5
T1-031632	Introduction of test cases on A-GPS positioning	604	1	F	5.5.0	5.6.0	Rel-5
T1-031634	P2 Idle Mode 6.2.1.1	598	1	F	5.5.0	5.6.0	Rel-5
T1-031635	Updates to 6.2 series test cases	608	1	F	5.5.0	5.6.0	Rel-5
T1-031638	Correction to Package 1 test case 7.2.3.13.	643	1	F	5.5.0	5.6.0	Rel-5
T1-031640	P2 Inter-system handover	593	1	F	5.5.0	5.6.0	Rel-5
T1-031641	P4 Inter-system handover	594	1	F	5.5.0	5.6.0	Rel-5
T1-031642	Modification to RRC TC 8.3.3.1 – Assign different C-RNTI in UTRAN MOBILITY INFORMATION	621	2	F	5.5.0	5.6.0	Rel-5
T1-031646	Corrections and updates on 8.1 RRC Connection Management Procedure for TDD mode	609	1	F	5.5.0	5.6.0	Rel-5
T1-031647	Corrections and updates on 8.1.6 RRC Connection Management Procedure for TDD mode, Direct Transfer	610	1	F	5.5.0	5.6.0	Rel-5
T1-031648	Corrections and updates on 8.2.1 Radio Bearer control procedure, Radio Bearer Establishment for TDD mode	611	1	F	5.5.0	5.6.0	Rel-5
T1-031649	Corrections and updates on 8.2.2 Radio Bearer control procedure, Radio Bearer Reconfiguration for TDD mode	612	1	F	5.5.0	5.6.0	Rel-5
T1-031650	Correction of references for section 18, RAB testing of TDD 1.28 Mcps option	613	1	F	5.5.0	5.6.0	Rel-5
T1-031655	CR for P1 test cases 8.3.4.1 and 8.4.1.1	626		F	5.5.0	5.6.0	99
T1-031656	Removal of package 1 RRC test case 8.2.5.1	646	1	F	5.5.0	5.6.0	Rel-5
T1-031657	CR 34.123-1 Rel-5: 12.4.2.4 Combined routing area updating / rejected / PLMN not allowed	599	1	F	5.5.0	5.6.0	Rel-5
T1-031667	Section 7.1.1: correction of coding of the Target Channel Type Field on FACH for TDD	584	1	F	5.5.0	5.6.0	Rel-5
T1-031668	Removal of Low priority RRC Measurement test cases	605	1	F	5.5.0	5.6.0	Rel-5

T1-031672	New RRC test case on soft handover for multiple radio links	606	1	F	5.5.0	5.6.0	Rel-5
T1-031679	Clarifications in low priority test case 11.1.2 PDP context activation requested by the network, successful and unsuccessful	591	2	F	5.5.0	5.6.0	Rel-5
T1-031681	CR 34.123-1 Rel-5: 12.4.2.5a Combined routing area updating / rejected / roaming not allowed in this location area	600	3	F	5.5.0	5.6.0	Rel-5
T1-031682	CR on Package 1 SM test case 11.1.1.1 Attach initiated by context activation/QoS Offered by Network is the QoS Requested	595	1	F	5.5.0	5.6.0	Rel-5
T1-031683	General Modification to clause 9 – MM test cases – to be run only in NMOII	648		F	5.5.0	5.6.0	Rel-5
T1-031685	Correction to package 3 test case 14.2.51b	645	2	F	5.5.0	5.6.0	Rel-5
T1-031686	Correction to RRC P2 test case 8.4.1.17	623	2	F	5.5.0	5.6.0	Rel-5
T1-031688	Package 1 test case 8.1.2.2	629	2	F	5.5.0	5.6.0	Rel-5
T1-031689	CR to P2 GMM TC 12.2.1.3	649		F	5.5.0	5.6.0	Rel-5
T1-031696	CR on Package 1 SM test cases 11.3.1 PDP context deactivation initiated by the UE and 11.3.2 PDP context deactivation initiated by the UE	596	1	F	5.5.0	5.6.0	Rel-5
T1-031708	Modification for GMM test cases	616		F	5.5.0	5.6.0	Rel-5

## CHANGE REQUEST

# 34.123-1 CR 602 # rev - # Current version: 5.5.0 #

For [HELP](#) on using this form, see bottom of this page or look at the pop-up text over the # symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	# New RRC test cases on Paging		
<b>Source:</b>	# Ericsson, Telecom Italia S.p.A.		
<b>Work item code:</b>	# TEI	<b>Date:</b>	# 24/10/2003
<b>Category:</b>	# <b>F</b>	<b>Release:</b>	# REL-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

**Reason for change:** # The test coverage for paging needs to be increased. For example, with respect to the following parameters:

Number of paging indicators per frame:  
 Currently only 18 is tested, when the range is 18, 36, 72, 144.

DRX cycle length coefficient:  
 Currently only 9 (for UTRAN) and 7 (for CN) is tested, out of the range 3..9 (UTRAN) and 6..9 (CN).

Number of paging records per PAGING TYPE 1 message:  
 Only one record is tested today. In real networks more than one record is possible.

**Summary of change:** # Two new paging test cases are proposed:

8.1.1.9 Paging for Connection in idle mode (multiple paging records)  
 Up to three records are included in the PAGING TYPE 1 message  
 Number of paging indicators per frame is set to 36.  
 DRX cycle length coefficient is set to 8 (PS) and 6 (CS).

8.1.1.10 Paging for Connection in connected mode (URA\_PCH, multiple paging records)  
 Up to three records are included in the PAGING TYPE 1 message  
 Number of paging indicators per frame is set to 72.  
 UTRAN DRX cycle length coefficient is set to 9 and then changed to 4.  
 The UE is paged with its CN UE identity, to also verify it will not reply in

		connected mode.				
<b>Consequences if not approved:</b>	⌘	Insufficient test coverage				
<b>Clauses affected:</b>	⌘	8.1.1.9 (new), 8.1.1.10 (new)				
<b>Other specs affected:</b>	⌘	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> </table> Other core specifications	Y	N		X
Y	N					
	X					
		<table border="1"> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </table> Test specifications	X			
X						
		<table border="1"> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td></td> </tr> </table> O&M Specifications		X		
	X					
<b>Other comments:</b>	⌘	Affects REL-5, REL-4 and R99.				

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

### 8.1.1.9 Paging for Connection in idle mode (multiple paging records)

#### 8.1.1.9.1 Definition

#### 8.1.1.9.2 Conformance requirement

A UE in idle mode, CELL\_PCH state or URA\_PCH state shall receive the paging information for all its monitored paging occasions. For an UE in idle mode, the paging occasions are specified in [25.304] and depend on the IE "CN domain specific DRX cycle length coefficient", as specified in subclause 8.6.3.1a. For a UE in CELL\_PCH state or URA\_PCH state, the paging occasions depend also on the IE "UTRAN DRX cycle length coefficient" and the IE "RRC State Indicator", as specified in subclauses 8.6.3.2 and 8.6.3.3 respectively.

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in idle mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

1> if the IE "Used paging identity" is a CN identity:

2> compare the IE "UE identity" with all of its allocated CN UE identities:

2> if one match is found:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "UE identity" and the IE "Paging cause" to the upper layers.

1> otherwise:

2> ignore that paging record.

:

In the UE, the initial direct transfer procedure shall be initiated, when the upper layers request establishment of a signalling connection. This request also includes a request for the transfer of a NAS message.

Upon initiation of the initial direct transfer procedure when the UE is in idle mode, the UE shall:

1> set the variable ESTABLISHMENT\_CAUSE to the cause for establishment indicated by upper layers;

1> perform an RRC connection establishment procedure, according to subclause 8.1.3;

1> if the RRC connection establishment procedure was not successful:

2> indicate failure to establish the signalling connection to upper layers and end the procedure.

1> when the RRC connection establishment procedure is completed successfully:

2> continue with the initial direct transfer procedure as below.

Upon initiation of the initial direct transfer procedure when the UE is in CELL\_PCH or URA\_PCH state, the UE shall:

1> perform a cell update procedure, according to subclause 8.3.1, using the cause "uplink data transmission";

1> when the cell update procedure completed successfully:

2> continue with the initial direct transfer procedure as below.

The UE shall, in the INITIAL DIRECT TRANSFER message:

1> set the IE "NAS message" as received from upper layers; and

1> set the IE "CN domain identity" as indicated by the upper layers; and

1> set the IE "Intra Domain NAS Node Selector" as follows:

2> derive the IE "Intra Domain NAS Node Selector" from TMSI/PMTSI, IMSI, or IMEI; and

2> provide the coding of the IE "Intra Domain NAS Node Selector" according to the following priorities:

1. derive the routing parameter for IDNNS from TMSI (CS domain) or PTMSI (PS domain) whenever a valid TMSI/PTMSI is available;
2. base the routing parameter for IDNNS on IMSI when no valid TMSI/PTMSI is available;
3. base the routing parameter for IDNNS on IMEI only if no (U)SIM is inserted in the UE.

1> calculate the START according to subclause 8.5.9 for the CN domain as set in the IE "CN Domain Identity"; and

1> include the calculated START value for that CN domain in the IE "START".

In CELL FACH state, the UE shall:

1> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 12 (or "System Information Block Type 11" if "System Information Block Type 12" is not being broadcast);

1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported.

The UE shall:

1> transmit the INITIAL DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3;

1> when the INITIAL DIRECT TRANSFER message has been submitted to lower layers for transmission:

2> confirm the establishment of a signalling connection to upper layers; and

2> add the signalling connection with the identity indicated by the IE "CN domain identity" in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS.

1> when the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC:

2> the procedure ends.

## Reference

3GPP TS 25.331 clause 8.1.2 and 8.1.8, 3GPP TS 25.211 clause 5.3.3.10 (FDD), 3GPP TS 25.221 (TDD), 3GPP TS 25.304 clause 8.

### 8.1.1.9.3 Test purpose

#### 1) For the CS domain

To confirm that the UE establishes an RRC connection after it receives a PAGING TYPE 1 message which contains multiple paging records and includes IE "UE identity"(in IE "Paging Record") set to the IMSI of the UE, and responds with a correct INITIAL DIRECT TRANSFER message.

#### 2) For the PS domain

To confirm that the UE establishes an RRC connection after it receives a PAGING TYPE 1 message which contains multiple paging records and includes IE "UE identity"(in IE "Paging Record") set to the P-TMSI allocated by SS at initial attach and responds with a correct INITIAL DIRECT TRANSFER message.

### 8.1.1.9.4 Method of test

## Initial Condition

System Simulator: 1 cell. PICH is configured with "Number of PI per frame" set to 36.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108 with a CN UE identity (set to IMSI in the CS domain), depending on the CN domain(s) supported by the UE.

Test Procedure

SS transmits SYSTEM INFORMATION BLOCK TYPE 1 or 13 messages, depending on the CN type supported by the UE. The SS also transmits SYSTEM INFORMATION BLOCK TYPE 5 messages. The SS transmits a PAGING TYPE 1 message, which includes an unmatched CN UE identity for idle mode, and an unmatched UTRAN UE identity for connected mode. The UE shall not change its state. The SS transmits a PAGING TYPE 1 message, which includes two unmatched identities and a matched CN UE identity for the UE in the idle state. During transmission of PAGING TYPE 1 messages, SS selects the correct paging indicator on the PICH in order to allow the UE to respond to paging. Then the UE transmits an RRC CONNECTION REQUEST to the SS, the SS transmits an RRC CONNECTION SETUP to the UE. When the UE receives this message, the UE establishes an RRC connection and transmits an RRC CONNECTION SETUP COMPLETE message and an INITIAL DIRECT TRANSFER message on the uplink DCCH.

NOTE: For UEs supporting GSM-MAP CN type only, SYSTEM INFORMATION TYPE 1 messages are to be sent by SS in this test case. On the other hand, SS transmits SYSTEM INFORMATION TYPE 13 messages if the UE under test supports only ANSI-41 CN type.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	SYSTEM INFORMATION BLOCK TYPE 13 or SYSTEM INFORMATION BLOCK TYPE 1	See specific message contents.
2		←	SYSTEM INFORMATION BLOCK TYPE 5	See specific message contents.
3		←	PAGING TYPE 1	The SS transmits the message, which includes only unmatched identities, and the UE does not change its state.
4		←	PAGING TYPE 1	The SS transmits the message, which includes a matched identity.
5		→	RRC CONNECTION REQUEST	
6		←	RRC CONNECTION SETUP	SS assigns DPCH resources to allow UE to establish an RRC connection.
7		→	RRC CONNECTION SETUP COMPLETE	
8		→	INITIAL DIRECT TRANSFER	

Specific Message Contents

SYSTEM INFORMATION BLOCK TYPE 1 (Step 1) – for UEs supporting GSM-MAP core networks

Use the default message type found in TS 34.108, except for the following.

Information Element	Value/remark
CN domain system information	
- CN domain identity	PS
- CN domain specific DRX cycle length coefficient	8
- CN domain identity	CS
- CN domain specific DRX cycle length coefficient	6

SYSTEM INFORMATION TYPE 13 (Step 1) – for UEs supporting ANSI-41 core networks

Use the default message type found in TS 34.108, clause 6.1.



SYSTEM INFORMATION BLOCK TYPE 5 (Step 2)

Use the default message type found in TS 34.108, except for the following.

<u>Information Element</u>	<u>Value/remark</u>
<u>PICH Info</u> - Number of PI per frame	36

PAGING TYPE 1 (Step 3)

<u>Information Element</u>	<u>Value/remark</u>
<u>Message Type</u> <u>Paging record list</u> - <u>Paging record 1</u> - <u>CHOICE Used paging identity</u> - <u>Paging cause</u> - <u>CN domain identity</u> - <u>CHOICE UE Identity</u> - <u>IMSI</u>	<u>CN identity</u> <u>Terminating Call with one of the supported services</u> <u>A Registered Domain (PS Domain or CS Domain)</u> <u>IMSI</u> <u>Set to an arbitrary octet string of length 7 bytes which is</u> <u>different from the IMSI value stored in the TEST USIM</u> <u>card.</u>
- <u>Paging record 2</u>	
- <u>CHOICE Used paging identity</u>	<u>UTRAN identity</u>
- <u>U-RNTI</u>	
- <u>SRNC Identity</u>	<u>Set to an arbitrary SRNC identity.</u>
- <u>S-RNTI</u>	<u>Set to an arbitrary 20-bit string.</u>
- <u>CN originated page to connected mode UE</u>	<u>Not Present</u>
<u>BCCH modification info</u>	<u>Not Present</u>

PAGING TYPE 1 (Step 4)For speech in CS:

<u>Information Element</u>	<u>Value/remark</u>
<u>Message Type</u> <u>Paging record list</u> <u>- Paging record 1</u> <u>- CHOICE Used paging identity</u> <u>- Paging cause</u> <u>- CN domain identity</u> <u>- CHOICE UE Identity</u> <u>- IMSI</u>  <u>- Paging record 2</u> <u>- CHOICE Used paging identity</u> <u>- U-RNTI</u> <u>- SRNC Identity</u> <u>- S-RNTI</u> <u>- CN originated page to connected mode UE</u> <u>- Paging record 3</u> <u>- CHOICE Used paging identity</u> <u>- Paging cause</u> <u>- CN domain identity</u> <u>- CHOICE UE identity</u> <u>- IMSI (GSM-MAP)</u>  <u>BCCH modification info</u>	 <u>CN identity</u> <u>Terminating Call with one of the supported services</u> <u>A Registered Domain (PS Domain or CS Domain)</u> <u>IMSI</u> <u>Set to an arbitrary octet string of length 7 bytes which is</u> <u>different from the IMSI value stored in the TEST USIM</u> <u>card.</u>  <u>UTRAN identity</u>  <u>Set to an arbitrary SRNC identity.</u> <u>Set to an arbitrary 20-bit string.</u> <u>Not Present</u>  <u>CN identity</u> <u>Terminating Conversational Call</u> <u>CS domain</u>  <u>Set to the same octet string as in the IMSI stored in the</u> <u>USIM card</u> <u>Not Present</u>

For packet in PS:

<u>Information Element</u>	<u>Value/remark</u>
<u>Message Type</u> <u>Paging record list</u> <u>- Paging record 1</u> <u>- CHOICE Used paging identity</u> <u>- Paging cause</u> <u>- CN domain identity</u> <u>- CHOICE UE Identity</u> <u>- IMSI</u>  <u>- Paging record 2</u> <u>- CHOICE Used paging identity</u> <u>- U-RNTI</u> <u>- SRNC Identity</u> <u>- S-RNTI</u> <u>- CN originated page to connected mode UE</u> <u>- Paging record 3</u> <u>- CHOICE Used paging identity</u> <u>- Paging cause</u> <u>- CN domain identity</u> <u>- CHOICE UE identity</u> <u>- P-TMSI</u> <u>BCCH modification info</u>	 <u>CN identity</u> <u>Terminating Call with one of the supported services</u> <u>A Registered Domain (PS Domain or CS Domain)</u> <u>IMSI</u> <u>Set to an arbitrary octet string of length 7 bytes which is</u> <u>different from the IMSI value stored in the TEST USIM</u> <u>card.</u>  <u>UTRAN identity</u>  <u>Set to an arbitrary SRNC identity.</u> <u>Set to an arbitrary 20-bit string.</u> <u>Not Present</u>  <u>CN identity</u> <u>Terminating Interactive Call</u> <u>PS domain</u>  <u>Use P-TMSI allocated by SS at initial attach.</u> <u>Not Present</u>

RRC CONNECTION REQUEST (Step 5)

<u>Information Element</u>	<u>Value/remark</u>
<u>Message type</u> <u>Initial UE identity</u>	<u>Same as the IMSI stored in the TEST USIM card, or the registered P-TMSI depending upon CN domain concerned.</u>
<u>Establishment Cause</u>	<u>Check to see if it is set to the same value as "Paging Cause" IE in the PAGING TYPE 1 message transmitted on step 3.</u>
<u>Protocol Error Indicator</u> <u>Measured results on RACH</u>	<u>Check to see if it is set to FALSE</u> <u>Not checked.</u>

INITIAL DIRECT TRANSFER (Step 8) – for UEs supporting GSM-MAP core networks

<u>Information Element</u>	<u>Value/remark</u>
<u>Message Type</u> <u>Integrity check info</u> <u>CN domain identity</u>	<u>Not present</u> <u>CS domain or PS domain (as specified by the SS in the PAGING TYPE 1 message of Step 4)</u>
<u>Intra Domain NAS Node Selector</u> <u>- CHOICE version</u> <u>-- CHOICE CN type</u> <u>--- CHOICE Routing basis</u> <u>---- Routing parameter</u>	<u>R99</u> <u>GSM-MAP</u> <u>IMSI (response to IMSI paging) in CS domain)</u> <u>P-TMSI (response to P-TMSI paging in PS Domain)</u> <u>If the IE "CN domain identity" is equal to "CS domain", bit string (10) consisting of DecimalToBinary [(IMSI div 10) mod 1000]. The first/ leftmost bit of the bit string contains the most significant bit of the result.</u> <u>If the IE "CN domain identity" is equal to "PS domain":</u> <u>The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant. The "Routing parameter" is set to bits b14 through b23 of the TMSI/ PTMSI. The first/ leftmost/ most significant bit of the bit string contains bit b23 of the TMSI/ PTMSI.</u>
<u>--- Entered parameter</u> <u>NAS message</u> <u>START</u> <u>Measured results on RACH</u>	<u>False</u> <u>Not checked</u> <u>Not checked</u> <u>Not checked</u>

INITIAL DIRECT TRANSFER (Step 8) – for UEs supporting ANSI-41 core networks

<u>Information Element</u>	<u>Value/remark</u>
<u>Message Type</u> <u>Integrity check info</u> <u>CN domain identity</u>	<u>Not present</u> <u>CS domain or PS domain (as specified by the SS in the PAGING TYPE 1 message of Step 3)</u>
<u>Intra Domain NAS Node Selector</u> <u>- CHOICE version</u> <u>NAS message</u> <u>START</u> <u>Measured results on RACH</u>	<u>ANSI-41 : Bitstring(14), all bits set to 0</u> <u>Not checked</u> <u>Not checked</u> <u>Not checked</u>

8.1.1.9.5 Test requirement

After step 3 the UE shall not respond to the PAGING TYPE 1 message sent in step 3.

After step 4 the UE shall transmit an RRC CONNECTION REQUEST message on the uplink CCCH.

After step 6 the UE shall have an RRC connection based on dedicated physical channel resources and transmit an RRC CONNECTION SETUP COMPLETE message and an INITIAL DIRECT TRANSFER message on the uplink DCCH.

### 8.1.1.10 Paging for Connection in connected mode (URA\_PCH, multiple paging records)

#### 8.1.1.10.1 Definition

#### 8.1.1.10.2 Conformance requirement

A UE in idle mode, CELL\_PCH state or URA\_PCH state shall receive the paging information for all its monitored paging occasions. For an UE in idle mode, the paging occasions are specified in [25.304] and depend on the IE "CN domain specific DRX cycle length coefficient", as specified in subclause 8.6.3.1a. For a UE in CELL\_PCH state or URA\_PCH state, the paging occasions depend also on the IE "UTRAN DRX cycle length coefficient" and the IE "RRC State Indicator", as specified in subclauses 8.6.3.2 and 8.6.3.3 respectively.

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

:

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

- 1> if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:
  - 2> if the optional IE "CN originated page to connected mode UE" is included:
    - 3> indicate reception of paging; and
    - 3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.
  - 2> otherwise:
    - 3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.
- 2> ignore any other remaining IE "Paging record" that may be present in the message.
- 1> otherwise:
  - 2> ignore that paging record.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI";

the UE shall:

- 1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

#### Reference

3GPP TS 25.331 clause 8.1.2, 8.3.1.7.

8.1.1.10.3 Test purpose

To confirm that the UE enters the CELL\_FACH state after it receives a PAGING TYPE 1 message in which the IE "Used paging identity" is set to "UTRAN identity", and the UE takes the U-RNTI value assigned to it in the IE "U-RNTI".

8.1.1.10.4 Method of testInitial Condition

System Simulator: 1 cell. PICH is configured with "Number of PI per frame" set to 72.

UE: URA\_PCH state (state 6-13) as specified in clause 7.4 of TS 34.108, with a valid U-RNTI assigned by the SS.

Test Procedure

The SS transmits SYSTEM INFORMATION BLOCK TYPE 6 messages with a modified PCH configuration. The SS then transmits a PAGING TYPE 1 message, which includes a matched IMSI, but the UE does not respond since it is in connected mode. The SS transmits a PAGING TYPE 1 message, which includes a matched U-RNTI but in a paging occasion not according to the DRX cycle of the UE. The UE does not reply. The SS transmits a PAGING TYPE 1 message, which includes a matched U-RNTI in a correct paging occasion. Then the UE listens to it and enters the CELL\_FACH state to transmit a CELL\_UPDATE message using uplink CCCH in respond to the paging. The SS sends the UE back to URA\_PCH state using CELL\_UPDATE\_CONFIRM and also modifies the UTRAN DRX cycle length for the UE. The SS then transmits a PAGING TYPE 1 message using the new paging occasions. The UE replies to this page.

Expected sequence

<u>Step</u>	<u>Direction</u>		<u>Message</u>	<u>Comment</u>
	<u>UE</u>	<u>SS</u>		
<u>1</u>		<u>←</u>	<u>SYSTEM INFORMATION BLOCK TYPE 6</u>	<u>See specific message contents</u>
<u>2</u>		<u>←</u>	<u>PAGING TYPE 1</u>	<u>The SS transmits the message that includes a matched CN UE identity, but the UE does not respond.</u>
<u>3</u>		<u>←</u>	<u>PAGING TYPE 1</u>	<u>The SS transmits the message that includes a matched UTRAN UE identity but in a paging occasion not according to the DRX cycle of the UE.</u>
<u>4</u>		<u>←</u>	<u>PAGING TYPE 1</u>	<u>The SS transmits the message that includes a matched UTRAN UE identity in the correct paging occasion.</u>
<u>5</u>		<u>→</u>	<u>CELL_UPDATE</u>	<u>The UE enters the CELL_FACH state.</u>
<u>6</u>		<u>←</u>	<u>CELL_UPDATE_CONFIRM</u>	<u>See message content.</u>
<u>7</u>		<u>→</u>	<u>UTRAN MOBILITY INFORMATION CONFIRM</u>	<u>After transmitting this message, the UE returns to URA_PCH state and changes its UTRAN DRX cycle.</u>
<u>8</u>		<u>←</u>	<u>PAGING TYPE 1</u>	<u>The SS transmits the message that includes a matched UTRAN UE identity, using a paging occasion which is included in the new DRX cycle, but not in the old DRX cycle.</u>
<u>9</u>		<u>→</u>	<u>CELL_UPDATE</u>	<u>The UE enters the CELL_FACH state.</u>
<u>10</u>		<u>←</u>	<u>CELL_UPDATE_CONFIRM</u>	<u>See message content.</u>
<u>11</u>		<u>→</u>	<u>UTRAN MOBILITY INFORMATION CONFIRM</u>	

[Specific Message Contents](#)[SYSTEM INFORMATION BLOCK TYPE 6 \(Step 1\)](#)

Use the default message type found in TS 34.108, except for the following.

<a href="#">Information Element</a>	<a href="#">Value/remark</a>
<a href="#">PICH Info</a> - <a href="#">Number of PI per frame</a>	72

[PAGING TYPE 1 \(Step 2\)](#)

<a href="#">Information Element</a>	<a href="#">Value/remark</a>
<a href="#">Message Type</a> <a href="#">Paging record list</a> - <a href="#">Paging record 1</a> - <a href="#">CHOICE Used paging identity</a> - <a href="#">Paging cause</a> - <a href="#">CN domain identity</a> - <a href="#">CHOICE UE Identity</a> - <a href="#">IMSI</a>  - <a href="#">Paging record 2</a> - <a href="#">CHOICE Used paging identity</a> - <a href="#">U-RNTI</a> - <a href="#">SRNC Identity</a>  - <a href="#">S-RNTI</a>  - <a href="#">CN originated page to connected mode UE</a> <a href="#">BCCH modification info</a>	<a href="#">CN identity</a> <a href="#">Terminating Call with one of the supported services</a> <a href="#">A Registered Domain (PS Domain or CS Domain)</a> <a href="#">IMSI</a> <a href="#">Set to the same octet string as in the IMSI stored in the USIM card.</a>  <a href="#">UTRAN identity</a>  <a href="#">Set to an unused SRNC identity which is different from the SRNC identity assigned.</a> <a href="#">Set to an arbitrary 20-bit string which is different from the S-RNTI assigned.</a> <a href="#">Not Present</a> <a href="#">Not Present</a>

[PAGING TYPE 1 \(Steps 3, 4 and 8\)](#)

<a href="#">Information Element</a>	<a href="#">Value/remark</a>
<a href="#">Message Type</a> <a href="#">Paging record list</a> - <a href="#">Paging record 1</a> - <a href="#">CHOICE Used paging identity</a> - <a href="#">Paging cause</a> - <a href="#">CN domain identity</a> - <a href="#">CHOICE UE Identity</a> - <a href="#">IMSI</a>  - <a href="#">Paging record 2</a> - <a href="#">CHOICE Used paging identity</a> - <a href="#">U-RNTI</a> - <a href="#">SRNC Identity</a> - <a href="#">S-RNTI</a> - <a href="#">CN originated page to connected mode UE</a> - <a href="#">Paging record 3</a> - <a href="#">CHOICE Used paging identity</a> - <a href="#">U-RNTI</a> - <a href="#">SRNC Identity</a> - <a href="#">S-RNTI</a> - <a href="#">CN originated page to connected mode UE</a> <a href="#">BCCH modification info</a>	<a href="#">CN identity</a> <a href="#">Terminating Call with one of the supported services</a> <a href="#">A Registered Domain (PS Domain or CS Domain)</a> <a href="#">IMSI</a> <a href="#">Set to an arbitrary octet string of length 7 bytes which is different from the IMSI value stored in the TEST USIM card.</a>  <a href="#">UTRAN identity</a>  <a href="#">Set to an unused SRNC identity which is different from the SRNC identity assigned.</a> <a href="#">Set to an arbitrary 20-bit string which is different from the S-RNTI assigned.</a> <a href="#">Not Present</a>  <a href="#">UTRAN identity</a>  <a href="#">Set to the previously assigned SRNC identity</a> <a href="#">Set to previously assigned S-RNTI</a> <a href="#">Not Present</a> <a href="#">Not Present</a>

CELL UPDATE CONFIRM (Step 6)

Use the message sub-type in default message content defined in [9] (TS 34.108) Clause 9, with the following exceptions.

<u>Information Element</u>	<u>Value/Remarks</u>
<u>New C-RNTI</u>	<u>'1010 1010 1010 1010'</u>
<u>RRC State Indicator</u>	<u>URA_PCH</u>
<u>UTRAN DRX Cycle length coefficient</u>	<u>4</u>

UTRAN MOBILITY INFORMATION CONFIRM (Step 7)

Only the message type is checked.

CELL UPDATE CONFIRM (Step 10)

Use the message sub-type in default message content defined in [9] (TS 34.108) Clause 9, with the following exceptions.

<u>Information Element</u>	<u>Value/Remarks</u>
<u>New C-RNTI</u>	<u>'1010 1010 1010 1010'</u>

8.1.1.10.5 Test requirement

After steps 2 and 3 the UE shall not respond to the paging.

After steps 4 and 8 the UE shall enter the CELL FACH state, and transmit CELL UPDATE message to initiate the cell updating procedure with the cell update cause set to "paging response".

After steps 6 and 10 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message.

## CHANGE REQUEST

# 34.123-1 CR 614 # rev - # Current version: 5.3.0 #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	# CR to 34.123-1 R5; Delay between activation and deactivation of compressed mode in package 4 test case 8.4.1.43		
<b>Source:</b>	# Qualcomm		
<b>Work item code:</b>	# TEI	<b>Date:</b>	# 23/10/2003
<b>Category:</b>	# <b>F</b>	<b>Release:</b>	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)	<b>2</b> (GSM Phase 2)	
	<b>A</b> (corresponds to a correction in an earlier release)	<b>R96</b> (Release 1996)	
	<b>B</b> (addition of feature),	<b>R97</b> (Release 1997)	
	<b>C</b> (functional modification of feature)	<b>R98</b> (Release 1998)	
	<b>D</b> (editorial modification)	<b>R99</b> (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .	<b>Rel-4</b> (Release 4)	
		<b>Rel-5</b> (Release 5)	
		<b>Rel-6</b> (Release 6)	

<b>Reason for change:</b>	# RAN2 CR #1891 to 25.331 changed clause 8.4.1.3 to specify that in the case where the UE receives the DPCH Compressed Mode Status Info IE while a TGPS reconfiguration CFN or TGCFN is pending, the UE behavior is unspecified.		
<b>Summary of change:</b>	# Delay of 2560 ms (256 frames) added between steps 3 and 4 of the test case.		
<b>Consequences if not approved:</b>	# UE could encounter undefined-behavior situation under test.		

<b>Clauses affected:</b>	# 8.4.1.43										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="width: 20px; text-align: center;">#</td> <td style="width: 20px; text-align: center;">#</td> </tr> <tr> <td style="width: 20px; text-align: center;">#</td> <td style="width: 20px; text-align: center;">#</td> </tr> <tr> <td style="width: 20px; text-align: center;">#</td> <td style="width: 20px; text-align: center;">#</td> </tr> </table>	Y	N	#	#	#	#	#	#	Other core specifications	#
Y	N										
#	#										
#	#										
#	#										
		Test specifications	#								
		O&M Specifications	#								
<b>Other comments:</b>	#										

### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be



downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 8.4.1.43.4 Method of test

## Initial Condition

System Simulator: 3 cells – Cell 1 on frequency  $f_1$ , cell 4 on frequency  $f_2$  and cell 5 on frequency  $f_3$ .

UE: "CS-DCCH + DTCH\_DCH" (state 6-9) as specified in clause 7.4 of TS 34.108. Ciphering shall be activated.

This test case applies only for UEs requiring compressed mode to perform inter-frequency measurements and supporting both PS and CS domains.

## Test Procedure

Table 8.4.1.43-1 illustrates the downlink power to be applied for the 3 cells, as well as the frequency and scrambling code for each cell.

Table 8.4.1.43-1a

Parameter	Unit	Cell 1						
Frequency		$f_1$						
Scrambling code		Scrambling code 1						
		T0	T1	T2	T3	T4	T5	
CPICH Ec	dBm/3.8 4 MHz	-60	-70	-70	-60	-70	-70	

Table 8.4.1.43-1b

Parameter	Unit	Cell 4							Cell 5				
Frequency		$f_2$							$f_3$				
Scrambling code		Scrambling code 3							Scrambling code 2				
		T0	T1	T2	T3	T4	T5	T0	T1	T2	T3	T4	T5
CPICH Ec	dBm/3.8 4 MHz	-95	-60	-60	-95	-60	-60	-95	-95	-60	-95	-95	-60

The UE is initially in CELL\_DCH, and has only cell 1 in its active set.

Next, SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to download compressed mode parameters in the UE without activating compressed mode. The UE shall answer with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

The SS then sets up inter-frequency measurements (event 2b), by sending a MEASUREMENT CONTROL message to the UE.

[The SS waits for 2560 ms for the UE to activate compressed mode.](#)

The SS establishes a PS domain RAB and de-activates compressed mode, by sending a RADIO BEARER SETUP message on DCCH using AM-RLC. The UE shall answer with a RADIO BEARER SETUP COMPLETE message.

At instant T1, the downlink power is changed according to what is shown in table 8.4.1.43-1. The SS shall then verify that the UE does not transmit a MEASUREMENT REPORT message.

Next the SS downloads compressed mode parameters and activates compressed mode by sending a PHYSICAL CHANNEL RECONFIGURATION message on DCCH using AM-RLC. The UE shall answer with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

Frequency  $f_2$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

Next, SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to reconfigure transport channel parameters (rate reduction PS RAB) and to change compressed mode method (to SF/2). The UE shall answer with a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message.

At instant T2, the downlink power is changed according to what is shown in table 8.4.1.43-1. Frequency  $f_3$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

At instant T3, the downlink power is changed according to what is shown in table 8.4.1.43-1. The increased quality of the used frequency should result in clearing of the concerning TRIGGERED\_2B\_EVENT.

Next, SS transmits a RADIO BEARER RELEASE message to release the CS domain RAB and change compressed mode method (from SF/2 to HLS). The UE shall answer with a RADIO BEARER RELEASE COMPLETE message.

At instant T4, the downlink power is changed according to what is shown in table 8.4.1.43-1. Frequency  $f_2$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

Next, SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to reconfigure transport channel parameters (rate increase PS RAB) – without performing hard handover. The UE shall answer with a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message.

At instant T5, the downlink power is changed according to what is shown in table 8.4.1.43-1. Frequency  $f_3$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

#### Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	SS downloads compressed mode parameters (using SF/2 method) without activating compressed mode.
2		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE acknowledges the downloading of compressed mode parameters.
3		←	MEASUREMENT CONTROL	The SS configures inter-frequency measurements in the UE and activates compressed mode.
<a href="#">3a</a>				<a href="#">SS waits for 2560 ms.</a>
4		←	RADIO BEARER SETUP	SS establishes PS domain RAB and de- activates compressed mode.
5		→	RADIO BEARER SETUP COMPLETE	The UE acknowledges the establishment of the RAB and the de- activation of compressed mode
6				The SS changes the power of the cells according to column T1 in table 8.4.1.43-1.
7				SS verifies that the UE does not transmit a MEASUREMENT REPORT message to the SS.
8		←	PHYSICAL CHANNEL RECONFIGURATION	SS downloads compressed mode parameters (using HLS method) and activates compressed mode.
9		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE acknowledges the downloading of compressed mode parameters and the activation of compressed mode.

10	→	MEASUREMENT REPORT	Frequency $f_2$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.
11	←	TRANSPORT CHANNEL RECONFIGURATION	SS reconfigures transport channel parameters (rate reduction PS RAB) and changes compressed mode method to SF/2.  Rate should be reduced to 0 kbps – no PS RAB room left to use for gap.
12	→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE acknowledges the transport channel reconfiguration and the change of compressed mode method
13			The SS changes the power of the cells according to column T2 in table 8.4.1.43-1.
14	→	MEASUREMENT REPORT	Frequency $f_3$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.
15			The SS changes the power of the cells according to T3 in table 8.4.1.43-1 (so the UE can trigger event 2b again for both frequencies).
16	←	RADIO BEARER RELEASE	SS releases the CS domain RAB (speech) and changes compressed mode method to HLS.
17	→	RADIO BEARER RELEASE COMPLETE	The UE acknowledges the release of the RAB and the compressed mode method change.
18			The SS changes the power of the cells according to column T4 in table 8.4.1.43-1.
19	→	MEASUREMENT REPORT	Frequency $f_2$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.
20	←	TRANSPORT CHANNEL RECONFIGURATION	SS reconfigures transport channel parameters (rate increase PS RAB) – without performing hard handover. SS includes TGCFNs for compressed mode.
21	→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE acknowledges the transport channel parameters change.

22			The SS changes the power of the cells according to column T5 in table 8.4.1.43-1.
23	→	MEASUREMENT REPORT	Frequency $f_3$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.

CR-Form-v7
<b>CHANGE REQUEST</b>
⌘ <b>34.123-1 CR 617</b> ⌘ rev <b>-</b> ⌘ Current version: <b>5.5.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ CR 34.123-1 Rel-5: P3 TC 8.4.1.28 Measurement Control and Report: UE internal measurement for events 6F and 6G
<b>Source:</b>	⌘ Nokia
<b>Work item code:</b>	⌘ TEI <span style="float: right;"><b>Date:</b> ⌘ 27/10/2003</span>
<b>Category:</b>	⌘ <b>F</b> <span style="float: right;"><b>Release:</b> ⌘ Rel-5</span> Use <u>one</u> of the following categories: <span style="float: right;">Use <u>one</u> of the following releases:</span> <b>F</b> (correction) <span style="float: right;">2 (GSM Phase 2)</span> <b>A</b> (corresponds to a correction in an earlier release) <span style="float: right;">R96 (Release 1996)</span> <b>B</b> (addition of feature), <span style="float: right;">R97 (Release 1997)</span> <b>C</b> (functional modification of feature) <span style="float: right;">R98 (Release 1998)</span> <b>D</b> (editorial modification) <span style="float: right;">R99 (Release 1999)</span> Detailed explanations of the above categories can <span style="float: right;">Rel-4 (Release 4)</span> be found in 3GPP <a href="#">TR 21.900</a> . <span style="float: right;">Rel-5 (Release 5)</span> <span style="float: right;">Rel-6 (Release 6)</span>

<b>Reason for change:</b>	⌘ The test case 8.4.1.28 Measurement Control and Report: UE internal measurement for events 6F and 6G is not inline with the RAN4 requirements. The change rate of Cell2 in the test is unrealistically high and it does not consider any window where Cell2 may appear.
<b>Summary of change:</b>	⌘ - The test case is aligned with the RAN4 requirements by limiting a window where Cell2 appears. In the modified test case Cell2 appears within a window of +/- 19 chips relative to the timing of Cell1. - TS25.101 defines a Birth-Death propagation condition, where the timing of a multipath may jump in a window of [-5 5] μs. This corresponds to [-19.2 19.2] chips. - The thresholds for Event 6F and 6E are set to 1037 (=1024+13) and 1011 (=1024-13). An alternative method for correcting the test case would be change the drifting rate of Cell2 from 19 chips/200 ms to some more realistic level. We could e.g. use a level that corresponds a UE speed of 120 km/h. This would mean. 0.0768 chip per 200 ms. This, on the other hand would imply very long testing time. Hence we propose that the timing of Cell2 jumps within a [-5 5] us window, which is also used in TS25.101.
<b>Consequences if not approved:</b>	⌘ A UE fulfilling the core performance requirements of RAN4 may fail in this signalling test case.

<b>Clauses affected:</b>	⌘ 8.4.1.28				
<b>Other specs</b>	⌘ <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications ⌘	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N				
<input type="checkbox"/>	<input checked="" type="checkbox"/>				

**affected:**

<input checked="" type="checkbox"/>	Test specifications
<input checked="" type="checkbox"/>	O&M Specifications

**Other comments:** ⌘ Affects R99, Rel-4 and Rel-5

**How to create CRs using this form:**

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Below is a brief summary:

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- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

MEASUREMENT REPORT (Step 4)

Information Element	Value/remark
Measurement identity	Check to see if set to 5
Measured Results	
- CHOICE measurement	Check to see if set to "UE Internal measured results"
- UE internal measured results	
-CHOICE <i>mode</i>	Check to see if set to "FDD"
UE Transmitted Power	Check to see if present and value is reasonable
Measured Results on RACH	Check to see if this IE is absent
Event results	
-CHOICE <i>event result</i>	Check to see if set to "UE internal measurement event results"
-UE internal event identity	Check to see if set to "6A"
-CHOICE <i>mode</i>	Check to see if set to "FDD"
-Primary CPICH info	Check to see if this IE is absent

MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
Measurement identity	Check to see if set to 5
Measured Results	
- CHOICE measurement	Check to see if set to "UE Internal measured results"
- UE internal measured results	
-CHOICE <i>mode</i>	Check to see if set to "FDD"
UE Transmitted Power	Check to see if present and value is reasonable
Measured Results on RACH	Check to see if this IE is absent
Event results	
-CHOICE <i>event result</i>	Check to see if set to "UE internal measurement event results"
-UE internal event identity	Check to see if set to "6B"
-CHOICE <i>mode</i>	Check to see if set to "FDD"
-Primary CPICH info	Check to see if this IE is absent

8.4.1.27.5 Test Requirement

After step 3, the UE shall transmit MEASUREMENT REPORT message, containing measured results for UE transmitted power. The 'Event results' IE contains event identity 6A.

After step 5, the UE shall transmit MEASUREMENT REPORT message, containing measured results for UE transmitted power. The 'Event results' IE contains event identity 6B.

<START OF MODIFIED SECTION>

8.4.1.28 Measurement Control and Report: UE internal measurement for events 6F and 6G

8.4.1.28.1 Definition

8.4.1.28.2 Conformance requirement

When event 6F is ordered by UTRAN in a MEASUREMENT CONTROL message, the UE shall send a MEASUREMENT REPORT message when the UE Rx-Tx time difference becomes larger than the threshold defined by the IE "UE Rx-Tx time difference threshold".

When event 6G is ordered by UTRAN in a MEASUREMENT CONTROL message, the UE shall send a MEASUREMENT REPORT when the UE Rx-Tx time difference becomes less than the threshold defined by the IE "UE Rx-Tx time difference threshold".



## Reference

3GPP TS 25.331, clauses 14.6.2.6 and 14.6.2.7.

## 8.4.1.28.3 Test Purpose

1. To confirm that the UE performs UE internal measurements and reporting for events 6F and 6G, when requested by the UTRAN to do so in the MEASUREMENT CONTROL message.

## 8.4.1.28.4 Method of test

## Initial Condition

System Simulator: 2 cells – The initial configuration of the cells in the SS shall follow the values indicated in table 6.1.2 of TS 34.108.

UE: CS-DCCH+DTCH\_DCH (State 6-9) or PS-DCCH+DTCH\_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

## Test Procedure

Table 6.1.2 of TS 34.108 specifies the radio conditions to be applied for the cells in this test.

The UE is in CELL\_DCH state in cell 1, after successfully executing procedures P11 or P13 as specified in clause 7.4 of TS 34.108.

SS then performs an active set update procedure by sending ACTIVE SET UPDATE REQUEST message on the downlink DCCH. Cell 2 is to be added to the active set, according to the content of this downlink message. The UE shall reply with an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH, and include cell 2 to the active set when the activation time specified has elapsed. SS sets the initial timing of cell 2 to be the timing of cell 1 - 5 chips.

Next, SS transmits MEASUREMENT CONTROL message to request the UE to perform UE internal measurements and reporting for events 6F and 6G.

SS adjusts the Tx timing of cell 2 above the threshold set to event 6F. After 'time to trigger' UE sends MEASUREMENT REPORT, triggered by event 6F, to SS.

SS adjusts the Tx timing of cell 2 below the threshold set to event 6G. After 'time to trigger' UE sends MEASUREMENT REPORT, triggered by event 6G, to SS. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

## Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_DCH state in cell 1.
2		←	ACTIVE SET UPDATE	SS asks UE to add cell 2 into the active set.
3		→	ACTIVE SET UPDATE COMPLETE	
4		←	MEASUREMENT CONTROL	SS requests for measurement and reporting of events 6F and 6G.
5				SS switches the Tx timing of Cell 2, with respect to Cell 1 to a delay of – 1915 chips <del>for every 200 ms. SS repeats this operation until the threshold is reached.</del>
6		→	MEASUREMENT REPORT	UE shall send 6F event measurement report.
7				SS switches the Tx timing of Cell 2 with respect to Cell 1 to a delay of 1915 chips <del>for every 200 ms. SS repeats this operation until the threshold is reached.</del>
8		→	MEASUREMENT REPORT	UE shall send 6G event measurement report.
9		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

## Specific Message Content

## ACTIVE SET UPDATE (Step 2)

The contents of ACTIVE SET UPDATE message for this test step is identical to the same message found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 2
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	0 chips
- Secondary CPICH info	Not Present
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE
- Secondary scrambling code	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	Not Present
- TPC Combination Index	0
- SSDT Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	Not Present
- SCCPCH information for FACH	Not Present
Radio link removal information	Not Present

ACTIVE SET UPDATE COMPLETE (Step 3)

Information Element	Value/remark
RRC transaction identifier	Check to see if it is set to 0

MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	5
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger Reporting
Additional measurements list	Not Present
CHOICE measurement type	UE internal measurement
- UE internal measurement	
-UE Internal measurement quantity	Present
- CHOICE mode	FDD
- Measurement quantity	UE Rx-Tx time difference
- Filter coefficient	0
- UE internal reporting quantity	Present
- UE Transmitted Power	FALSE
- CHOICE mode	FDD
- UE Rx-Tx time difference	TRUE
- CHOICE report criteria	UE internal measurement reporting criteria
- Parameters sent for each UE internal measurement event	
-UE internal event identity	6F
-Time-to-trigger	0 milliseconds
-UE Rx-Tx time difference threshold	<del>1037</del> 4174
-UE internal event identity	6G
-Time-to-trigger	0 milliseconds
-UE Rx-Tx time difference threshold	<del>1011</del> 874
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
Measurement identity	Check to see if set to 5
Measured Results	
- CHOICE measurement	Check to see if set to "UE Internal measured results"
- UE internal measured results	
-CHOICE mode	Check to see if set to "FDD"
UE Rx-Tx report entries	
- Primary CPICH info	
-Primary scrambling code	Check to see if set to codes assigned for cell 1 & cell 2.
-UE Rx-Tx time difference type 1	Check to see if present and value is reasonable
Measured Results on RACH	Check to see if this IE is absent
Event results	
-CHOICE event result	Check to see if set to "UE internal measurement event results"
-UE internal event identity	Check to see if set to "6F"
-CHOICE mode	Check to see if set to "FDD"
-Primary CPICH info	
-Primary scrambling code	Check to see if set to code assigned for cell 2.

## MEASUREMENT REPORT (Step 8)

Information Element	Value/remark
Measurement identity	Check to see if set to 5
Measured Results	
- CHOICE measurement	Check to see if set to "UE Internal measured results"
- UE internal measured results	
-CHOICE <i>mode</i>	Check to see if set to "FDD"
UE Rx-Tx report entries	
- Primary CPICH info	Check to see if set to codes assigned for cell 1 & cell 2.
-Primary scrambling code	Check to see if present and value is reasonable
-UE Rx-Tx time difference type 1	Check to see if this IE is absent
Measured Results on RACH	
Event results	
-CHOICE <i>event result</i>	Check to see if set to "UE internal measurement event results"
-UE internal event identity	Check to see if set to "6G"
-CHOICE <i>mode</i>	Check to see if set to "FDD"
-Primary CPICH info	
-Primary scrambling code	Check to see if set to code assigned for cell 2

## 8.4.1.28.5 Test Requirement

After step 5, the UE shall transmit MEASUREMENT REPORT message, containing measured results for UE Rx-Tx time difference. The 'Event results' IE contains event identity 6F.

After step 7, the UE shall transmit MEASUREMENT REPORT message, containing measured results for UE Rx-Tx time difference. The 'Event results' IE contains event identity 6G.

<END OF MODIFIED SECTION>

CR-Form-v7
<b>CHANGE REQUEST</b>
⌘ <b>34.123-1 CR 618</b> ⌘ rev <b>-</b> ⌘ Current version: <b>5.5.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘	CR 34.123-1 Rel-5: Removal of P3 TC 10.1.3.3.3 Incoming call / U9 mobile terminating call confirmed / termination requested by the user
<b>Source:</b>	⌘	Nokia
<b>Work item code:</b>	⌘	TEI
	<b>Date:</b>	⌘ 17/10/2003
<b>Category:</b>	⌘	<b>F</b>
		Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .
	<b>Release:</b>	⌘ Rel-5
		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘	Test case is not sensible.
<b>Summary of change:</b>	⌘	Test case 10.1.3.3.3 is testing user requested termination of incoming call when the call control entity of the UE is in state U9 - mobile terminating call confirmed. However, in that particular state the user does not yet have any indication of the incoming call, so in real life there is no way for the user to terminate the call.  Considering this the test case is not sensible.
<b>Consequences if not approved:</b>	⌘	Test case remains in the specification.

<b>Clauses affected:</b>	⌘	10.1.3.3.3								
<b>Other specs affected:</b>	⌘	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> </table> Other core specifications <table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;"> </td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> </table> Test specifications O&M Specifications	Y	N		X	X			X
Y	N									
	X									
X										
	X									
		⌘ 34.123-2								
<b>Other comments:</b>	⌘	Affects R99, Rel-4 and Rel-5								

**How to create CRs using this form:**

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- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U9 (by using a SETUP message not containing the signal information element). The SS sends a RADIO BEARER SETUP for traffic channel to the UE. The UE shall respond with a RADIO BEARER SETUP COMPLETE message. The UE sends an ALERTING message and enters state U7, call received. The SS verifies by using the status enquiry procedure that the UE has entered the correct state.

## Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Radio Bearer Setup Procedure	See TS 34.108 clause 7.1.3  cause #30, state U7
2		->	ALERTING	
3		<-	STATUS ENQUIRY	
4		->	STATUS	

## Specific message contents:

None.

## 10.1.3.3.2.5 Test requirements

After step 1 the UE shall send an ALERTING message and enter state U7.

<START OF MODIFIED SECTION>

### 10.1.3.3.3 ~~Void~~~~incoming call / U9 mobile terminating call confirmed / termination requested by the user~~

#### ~~10.1.3.3.3.1 Definition~~

~~The call control entity of the UE being in the state, U9, the user requests for releasing of the call.~~

#### ~~10.1.3.3.3.2 Conformance requirement~~

~~Apart from the exceptions identified in TS 24.008 clause 5.4.2, the call control entity of the UE shall initiate clearing by: stopping all running call control timers, sending a DISCONNECT message; starting timer T305; and entering the "disconnect request" state.~~

#### ~~References~~

~~TS 24.008 clause 5.4.3.1~~

#### ~~10.1.3.3.3.3 Test purpose~~

~~To verify that a CC entity of the UE in CC state U9, "Mobile Terminating Call Confirmed", upon request by the user to terminate will send a DISCONNECT message and enter the CC state U11, "Disconnect Request".~~

~~10.1.3.3.3.4 Method of test~~~~Related ICS/IXIT statements~~

- ~~—supported MT circuit switched basic services;~~
- ~~—MT circuit switched basic services for which immediate connect is not used;~~
- ~~—the UE supports user requested call clearing in the state U9.~~

~~Initial conditions~~~~System Simulator:~~

- ~~—1 cell, default parameters.~~

~~User Equipment:~~

- ~~—The UE is in MM state "idle, updated" with valid TMSI and CKSN.~~
- ~~—The UE is brought into the state U9 by using table 10.1.3/4.~~

~~Test procedure~~

~~An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U9 (by using a SETUP message not containing the signal information element). Then the user requests termination of the call, if possible. The UE sends a DISCONNECT message and enters state U11, disconnect request. The SS verifies by using the status enquiry procedure that the UE has entered the correct state.~~

~~Expected sequence~~

Step	Direction		Message	Comments
	UE	SS		
1				the UE is made to clear the call  cause #30, state U11
2		->	DISCONNECT	
3		<	STATUS ENQUIRY	
4		->	STATUS	

~~Specific message contents:~~

~~None.~~

~~10.1.3.3.3.5 Test requirements~~

~~After step 1 the UE shall send a DISCONNECT message and enter the CC state U11, "Disconnect Request".~~

<END OF MODIFIED SECTION>



CR-Form-v7

## CHANGE REQUEST

⌘ **TS 34.123-1 CR 619** ⌘ rev **-** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ General correction of CM TGD parameter		
<b>Source:</b>	⌘ Ericsson		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 27/10/2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)		2 (GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)		R96 (Release 1996)
	<b>B</b> (addition of feature),		R97 (Release 1997)
	<b>C</b> (functional modification of feature)		R98 (Release 1998)
	<b>D</b> (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ General changes: Parameter TGD has a value range from 15 to 269 and "undefined". Currently in many test cases it is set to value 0. Specific changes for TC 8.4.1.40: The intention of this TC is to test sparse compressed mode patterns, hence the TC is only applicable for UEs supporting Compressed Mode.
<b>Summary of change:</b>	⌘ General changes: Parameter TGD changed from 0 to "undefined". Specific changes for TC 8.4.1.40: Questions about Compressed Mode applicability removed from Initial Condition, Test procedure and Specific message contents. Also editorial mistakes corrected.
<b>Consequences if not approved:</b>	⌘ Might cause unspecified UE behaviour.

<b>Clauses affected:</b>	⌘ 8.2.6.38, 8.3.7.5, 8.4.1.31, 8.4.1.33, 8.4.1.34, 8.4.1.35, 8.4.1.36, 8.4.1.40, 8.4.1.42, 8.4.1.43								
<b>Other specs affected:</b>	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td>X</td> <td></td> </tr> </table>	Y	N		X	X		Other core specifications	⌘ TS 34.123-2
Y	N								
	X								
X									
		Test specifications							

O&M Specifications

**Other comments:** ⌘ Affects R99, Rel4 and Rel5 UEs.

**How to create CRs using this form:**

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of modified section>

8.2.6.38 Physical channel reconfiguration for transition from CELL\_DCH to CELL\_DCH (Hard handover to another frequency with timing re-initialised): Failure (Physical channel failure and reversion to old channel)

8.2.6.38.1 Definition

8.2.6.38.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset.

If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel establishment failure".

...

If the received message caused the UE to be in CELL\_DCH state and the UE failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

1> revert to the configuration prior to the reception of the message (old configuration);

...

1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "failure cause" to "physical channel failure".

1> set the variable ORDERED\_RECONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

...

The UE shall:

1> in case of reception of a PHYSICAL CHANNEL RECONFIGURATION message:

...

2> transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE as response message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.5.4.

## 8.2.6.38.3 Test purpose

To confirm that the UE reverts to the old configuration (including measurement configurations, ciphering procedures and compressed mode configurations if required) and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if the UE fails to reconfigure the new physical channel according to the received PHYSICAL CHANNEL RECONFIGURATION message before timer T312 expiry.

## 8.2.6.38.4 Method of test

## Initial Condition

System Simulator: 4 cells – Cell 1 and cell 2 on frequency  $f_1$ , cell 4 on frequency  $f_2$  and cell 5 on frequency  $f_3$ .

UE: "CS-DCCH+DTCH\_DCH" (state 6-9) or "PS-DCCH+DTCH\_DCH" (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the test case shall be run twice, once starting from state 6-9, once starting from state 6-10. Ciphering shall be activated.

## Related ICS/IXIT statements

- Compressed mode required yes/no

## Test Procedure

Table 8.2.6.38-1 illustrates the downlink power to be applied for the 4 cells, as well as the frequency and scrambling code for each cell.

Table 8.2.6.38-1a

Parameter	Unit	Cell 1					Cell 2				
		$f_1$					$f_1$				
Scrambling code		Scrambling code 1					Scrambling code 2				
		T0	T1	T2	T3	T4	T0	T1	T2	T3	T4
CPICH $E_c$	dBm/3.8 4 MHz	-60	-60	-75	-60	-75	-95	-60	-75	-60	-75

Table 8.2.6.38-1b

Parameter	Unit	Cell 4					Cell 5				
		$f_2$					$f_3$				
Scrambling code		Scrambling code 3					Scrambling code 4				
		T0	T1	T2	T3	T4	T0	T1	T2	T3	T4
CPICH $E_c$	dBm/3.8 4 MHz	-60	-60	-60	-	-70	-60	-60	-70	-	-60
		-60	-60	-60	122	-70	-60	-60	-70	122	-60

The UE is initially in CELL\_DCH, and has only cell 1 in its active set.

At instant T1, the downlink power is changed according to what is shown in table 8.2.6.38 -1. Cell 2 should then trigger event 1a as has been configured through the default System Information Block Type 11. The UE shall thus send a MEASUREMENT REPORT to the SS, triggered by cell 2.

The SS adds then cell 2 to the active set of the UE, by sending an ACTIVE SET UPDATE message to the UE. The UE shall answer with an ACTIVE SET UPDATE COMPLETE message.

The SS then configures compressed mode, (if required by the UE) to prepare the UE for inter-frequency measurements, by sending a PHYSICAL CHANNEL RECONFIGURATION message on DCCH using AM-RLC. The UE shall answer with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

The SS then sets up inter-frequency measurements (event 2b), by sending a MEASUREMENT CONTROL message to the UE. Compressed mode is started at the same time in that message, (if required).

At instant T2, the downlink power is changed according to what is shown in table 8.2.6.38-1. Frequency  $f_2$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

At instance T3, the downlink power is changed according to what is shown in table 8.2.6.38-1.

SS then transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE on DCCH using AM-RLC, to order it to perform timing reinitialised inter-frequency handover to cell 4 on frequency  $f_2$ .

The UE shall revert to the old configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message to the SS on the DCCH using AM RLC, with the value "physical channel failure" in the IE "failure cause".

At instant T4, the downlink power is changed according to what is shown in table 8.2.6.38-1. Frequency  $f_3$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

#### Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The SS changes the power of the cells according to column T1 in table 8.2.6.38-1.
2		→	MEASUREMENT REPORT	Event 1a is triggered by cell 2 in the UE, which sends a MEASUREMENT REPORT message to the SS.
3		←	ACTIVE SET UPDATE	The SS adds cell 2 to the active set of the UE.
4		→	ACTIVE SET UPDATE COMPLETE	The UE answers with an ACTIVE SET UPDATE COMPLETE message to the SS.
5		←	PHYSICAL CHANNEL RECONFIGURATION	The SS downloads the compressed mode parameters in the UE, (if required).
6		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE acknowledges the downloading of the compressed mode parameters (only if compressed mode was configured).
7		←	MEASUREMENT CONTROL	The SS configures inter-frequency measurements in the UE, and activates compressed mode (if required).
8				The SS changes the power of the cells according to column T2 in table 8.2.6.38-1.
9		→	MEASUREMENT REPORT	Frequency $f_2$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.
				The SS changes the power of the cells according to column T3 in table 8.2.6.38-1.

10	←	PHYSICAL CHANNEL RECONFIGURATION	The SS orders the UE to perform timing re-initialised inter-frequency handover to cell 4 on frequency $f_2$ .
11	→	PHYSICAL CHANNEL RECONFIGURATION FAILURE	After T312 expires, the UE shall revert to the old channel and transmits this message.
12			The SS changes the power of the cells according to column T4 in table 8.2.6.38-1.
13	→	MEASUREMENT REPORT	Frequency $f_3$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.

### Specific Message Content

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

#### MEASUREMENT REPORT (Step 2)

Information Element	Value/Remark
Message Type Integrity check info <ul style="list-style-type: none"> <li>- Message authentication code</li> <li>- RRC Message sequence number</li> </ul> Measurement identity Measured Results <ul style="list-style-type: none"> <li>- Intra-frequency measured results</li> <li>- Cell measured results</li> <li>- Cell Identity</li> <li>- SFN-SFN observed time difference</li> <li>- Cell synchronisation information</li> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> <li>- CPICH Ec/N0</li> <li>- CPICH RSCP</li> <li>- Pathloss</li> <li>- Cell measured results</li> <li>- Cell Identity</li> <li>- SFN-SFN observed time difference</li> <li>- Cell synchronisation information</li> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> <li>- CPICH Ec/N0</li> <li>- CPICH RSCP</li> <li>- Pathloss</li> </ul> Measured results on RACH Additional measured results Event results <ul style="list-style-type: none"> <li>- Intra-frequency measurement event results</li> <li>- Intra-frequency event identity</li> <li>- Cell measurement event results</li> </ul>	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. 1  Check that this IE is absent Check that this IE is absent Check that this IE is absent  Scrambling code 1 (or scrambling code 2) Check that this IE is absent Check that this IE is present Check that this IE is absent  Check that this IE is absent Check that this IE is absent Check that this IE is present and includes IE COUNT-C-SFN frame difference  Scrambling code 2 (or scrambling code 1 if the previous scrambling code included by the UE was scrambling code 2) Check that this IE is absent Check that this IE is present Check that this IE is absent Check that this IE is absent Check that this IE is absent  1a

- Primary CPICH info - Primary scrambling code	Scrambling code 2
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## ACTIVE SET UPDATE (Step 3)

Information Element	Value/Remark
Radio link addition information	
- Primary CPICH Info	Scrambling code 2
- Primary Scrambling Code	Reference to TS34.108 clause 6.10
- Downlink DPCH info for each RL	Parameter Set
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	Calculated value from Cell synchronisation information
- Secondary CPICH info	Not Present
- DL channelisation code	Not Present
- Secondary scrambling code	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"
- Spreading factor	Any value between 0 and Spreading factor-1 (use different values for each DPCH in case several DPCHs are allocated to the UE).
- Code Number	Not Present
- Scrambling code change	0
- TPC Combination Index	Not Present
- SS DT Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	Not Present
- SCCPCH information for FACH	Not Present

## PHYSICAL CHANNEL RECONFIGURATION (Step 5 for the CS case)

Information Element	Value/Remark
Activation time	Not Present
New U-RNTI	Not Present
New C-RNTI	Not Present
New DSCH-RNTI	Not Present
RRC State indicator	CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
Downlink counter synchronisation info	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
CHOICE channel requirement	Not Present
CHOICE mode	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	Not Present
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not Present
- TGD	<a href="#">undefined</a>
- TGPL1	3

- TGPL2	Not Present
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL, UL only or DL only (depending on the UE capability)
- Downlink compressed mode method	SF/2 (or not sent, depending on the UE capability)
- Uplink compressed mode method	SF/2 (or not sent, depending on the UE capability)
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TX Diversity mode	Not Present
- SSDT information	Not Present
- Default DPCH Offset Value	Not Present
Downlink information per radio link list	2 radio links
Downlink information for each radio link	
- CHOICE mode	FDD
- Primary CPICH info	Scrambling code 1
- Cell ID	Not present
- PDSCH with SHO DCH info	Not present
- PDSCH code mapping	Not present
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	0
- Secondary CPICH info	Not present
- DL channelisation code	
- Secondary scrambling code	Not present
- Spreading factor	Reference to TS34.108 clause 6.10
- Code number	Parameter Set Same as the code currently allocated to the UE in cell 1
- Scrambling code change	Code change
- TPC combination index	0
- SSDT cell identity	Not present
- Closed loop timing adjustment mode	Not present
Downlink information for each radio link	
- CHOICE mode	FDD
- Primary CPICH info	Scrambling code 2
- Cell ID	Not present
- PDSCH with SHO DCH info	Not present
- PDSCH code mapping	Not present
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	0
- Secondary CPICH info	Not present
- DL channelisation code	
- Secondary scrambling code	Not present
- Spreading factor	Reference to TS34.108 clause 6.10
- Code number	Parameter Set Same as the code currently allocated to the UE in cell 2
- Scrambling code change	No code change
- TPC combination index	0



## PHYSICAL CHANNEL RECONFIGURATION MESSAGE (Step 5 for the PS case)

Information Element	Value/Remark
Activation time	Not Present
New U-RNTI	Not Present
New C-RNTI	Not Present
New DSCH-RNTI	Not Present
RRC State indicator	CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
Downlink counter synchronisation info	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
CHOICE <i>channel requirement</i>	Not Present
CHOICE <i>mode</i>	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	Not Present
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Deactivate
- TGCFN	Not Present
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	FDD Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not Present
- TGD	<a href="#">undefined</a>
- TGPL1	3
- TGPL2	Not Present
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL, UL only or DL only (depending on the UE capability)
- Downlink compressed mode method	HLS(or not sent, depending on the UE capability)
- Uplink compressed mode method	HLS(or not sent, depending on the UE capability)
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TX Diversity mode	Not Present
- SSDT information	Not Present
- Default DPCH Offset Value	Not Present
Downlink information for each radio link	Not Present

## MEASUREMENT CONTROL (Step 7)

Information Element	Value/Remark
Measurement Identity	2
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Event Trigger

Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	2 inter-frequency cells
- Inter-frequency cell id	4
- Frequency info	
- UARFCN uplink (Nu)	UARFCN for the uplink corresponding to $f_2$
- UARFCN downlink (Nd)	UARFCN for the downlink corresponding to $f_2$
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Scrambling code 3
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Inter-frequency cell id	5
- Frequency info	
- UARFCN uplink (Nu)	UARFCN for the uplink corresponding to $f_3$
- UARFCN downlink (Nd)	UARFCN for the downlink corresponding to $f_3$
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	Not present
- Primary Scrambling Code	Scrambling code 4
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	Not present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not present
- Measurement validity	
- UE State	CELL_DCH
- Inter-frequency set update	
- UE autonomous update	On with no reporting
- Non autonomous update mode	Not present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2b
- Threshold used frequency	-70 dBm
- W used frequency	0.0
- Hysteresis	1.0 dB
- Time to trigger	100 ms
- Reporting cell status	Report cells within monitored and/or virtual active set on non-used frequency
- Maximum number of reported cells per reported non-used frequency	2
- Parameters required for each non-used frequency	

- Threshold non used frequency	-65 dBm
- W non-used frequency	0
DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS Status Flag	Activate
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256

MEASUREMENT REPORT (Step 9)

Information Element	Value/Remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. 2
Measurement identity	
Measured Results	
- Inter-frequency measured results list	
- Frequency info	
-CHOICE mode	FDD
- UARFCN uplink	Check that the value of this IE is set to UARFCN for the uplink corresponding to $f_2$ (Could be absent in case the duplex distance is the default duplex distance)
- UARFCN downlink	Check that the value of this IE is set to UARFCN for the downlink corresponding to $f_2$
- UTRA carrier RSSI	Check that this IE is absent
- Inter-frequency cell measurement results	Check that the value of this IE is set to 1 cell reported
- Cell measured results	
- Cell Identity	Check that this IE is absent
- SFN-SFN observed time difference	Check that this IE is absent
- Cell synchronisation information	Check that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Check that the value of this IE is set to Scrambling code 3
- CPICH Ec/N0	Check that this IE is absent
- CPICH RSCP	Check that this IE is present
- Pathloss	Check that this IE is absent
Measured results on RACH	Check that this IE is absent
Additional measured results	Check that this IE is absent
Event results	
- Inter-frequency measurement event results	
- Inter-frequency event identity	2b
- Inter-frequency cells	
- Frequency info	
-CHOICE mode	FDD
- UARFCN uplink	Check that the value of this IE is set to UARFCN for the uplink corresponding to $f_2$ (Could be absent in case the duplex distance is the default duplex distance)
- UARFCN downlink	Check that the value of this IE is set to UARFCN for the downlink corresponding to $f_2$
- Non freq related measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check that the value of this IE is set to Scrambling code 3

PHYSICAL CHANNEL RECONFIGURATION (Step 10)

Information Element	Value/Remark
Activation time	Not Present
New U-RNTI	Not Present
New C-RNTI	Not Present
New DSCH-RNTI	Not Present

RRC State indicator	CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
Downlink counter synchronisation info	Not Present
Frequency info	FDD
- CHOICE mode	Not present
- UARFCN uplink (Nu)	UARFCN for the downlink corresponding to $f_2$
- UARFCN downlink (Nd)	Not Present
Maximum allowed UL TX power	Not Present
CHOICE <i>channel requirement</i>	Not Present
CHOICE <i>mode</i>	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	Initialise
- Timing indication	0
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	Not Present
- Downlink rate matching restriction information	Reference to TS34.108 clause 6.10
- Spreading factor	Parameter Set
- Fixed or flexible position	Reference to TS34.108 clause 6.10
- TFCI existence	Parameter Set
- CHOICE SF	Reference to TS34.108 clause 6.10
- DPCH compressed mode info	Parameter Set
- TGPSI	1
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	Not present
- TX Diversity mode	Not Present
- SSDT information	Not Present
- Default DPCH Offset Value	Arbitrary value between 0..306688 by step of 512
Downlink information per radio link list	1 radio link
Downlink information for each radio link	
- CHOICE mode	FDD
- Primary CPICH info	Scrambling code 3
- Cell ID	Not present
- PDSCH with SHO DCH info	Not present
- PDSCH code mapping	Not present
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	Set to value of DPCH Frame Offset modulo 38400
- Secondary CPICH info	Not present
- DL channelisation code	Reference to TS34.108 clause 6.10
- Secondary scrambling code	Parameter Set
- Spreading factor	Not present
- Code number	Reference to TS34.108 clause 6.10
- Scrambling code change	Parameter Set
- TPC combination index	Any value between 0 and Spreading factor-1
- SSDT cell identity	Not Present
- Closed loop timing adjustment mode	0
	Not present
	Not present

## MEASUREMENT REPORT (Step 13)

Information Element	Value/Remark
Message Type	
Integrity check info	

- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	2
Measured Results	
- Inter-frequency measured results list	
- Frequency info	
-CHOICE mode	FDD
- UARFCN uplink	Check that the value of this IE is set to UARFCN for the uplink corresponding to $f_3$ (Could be absent in case the duplex distance is the default duplex distance)
- UARFCN downlink	Check that the value of this IE is set to UARFCN for the downlink corresponding to $f_3$
- UTRA carrier RSSI	Check that this IE is absent
- Inter-frequency cell measurement results	Check that the value of this IE is set to 1 cell reported
- Cell measured results	
- Cell Identity	Check that this IE is absent
- SFN-SFN observed time difference	Check that this IE is absent
- Cell synchronisation information	Check that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Check that the value of this IE is set to Scrambling code 4
- CPICH Ec/N0	Check that this IE is absent
- CPICH RSCP	Check that this IE is present
- Pathloss	Check that this IE is absent
Measured results on RACH	Check that this IE is absent
Additional measured results	Check that this IE is absent
Event results	
- Inter-frequency measurement event results	
- Inter-frequency event identity	2b
- Inter-frequency cells	
- Frequency info	
-CHOICE mode	FDD
- UARFCN uplink	Check that the value of this IE is set to UARFCN for the uplink corresponding to $f_3$ (Could be absent in case the duplex distance is the default duplex distance)
- UARFCN downlink	Check that the value of this IE is set to UARFCN for the downlink corresponding to $f_3$
- Non freq related measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check that the value of this IE is set to Scrambling code 4

### 8.2.6.38.5 Test Requirement

After step 1, the UE shall send a MEASUREMENT REPORT message triggered by event 1a for cell 2.

After step 3, the UE shall send an ACTIVE SET UPDATE COMPLETE message to acknowledge that it has added cell 2 to its active set.

After step 5, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS to acknowledge the downloading of the compressed mode parameters that were sent in the PHYSICAL CHANNEL RECONFIGURATION message of step 4 (only if compressed mode was required).

After step 8, the UE shall transmit a MEASUREMENT REPORT message triggered by frequency  $f_2$ . In that message, cell 4 shall be the only cell included in the IE event results.

After step 10, the UE shall revert to the old configuration and transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message.

After step 12, the UE shall transmit a MEASUREMENT REPORT message triggered by frequency  $f_3$ . In that message, cell 5 shall be the only cell included in the IE event results.

<End of modified section>

<Start of modified section>

### 8.3.7.5 Inter system handover from UTRAN/To GSM/Speech/Failure

#### 8.3.7.5.1 Definition

#### 8.3.7.5.2 Conformance requirement

If the UE does not succeed to establish the connection to the other radio access technology, it shall

1> revert back to the UTRA configuration;

1> establish the UTRA physical channel(s) used at the time for reception of HANOVER FROM UTRAN COMMAND;

...

transmit the HANOVER FROM UTRAN FAILURE message setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "physical channel failure".

1> When the HANOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

2> the procedure ends.

#### Reference(s)

TS 25.331 Clause 8.3.7.5.

#### 8.3.7.5.3 Test purpose

To test that the UE reactivates the old configuration and uses this to transmit a HANOVER FROM UTRAN FAILURE message to the network including IE "Inter-RAT Handover failure cause" which is set to "physical channel failure", when it receives an HANOVER FROM UTRAN COMMAND and the connection to GSM for handover can not be established.

To verify that after the handover failure the UE resumes previously configured compressed mode patterns and measurements.

#### 8.3.7.5.4 Method of test

##### Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 9.

UE: CC State U10 in cell 1

##### Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,

- UE supports GSM FR,
- UE supports UTRAN AMR,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

#### Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

#### Test Procedure

The SS starts the UTRAN cell and brings the UE into call active state (CC state U10) with AMR. If the UE requires compressed mode (refer ICS/IXIT), the SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message. This message is used to provide measurement control parameters (GSM RSSI) to the UE and to start compressed mode for the measurement if required according to the UE capabilities. The UE replies according to request by sending RRC: MEASUREMENT REPORT messages periodically to SS (reporting period is 1000 ms).

The SS starts GSM cell without activating any dedicated channel in the cell, then sends HANDOVER FROM UTRAN COMMAND indicating a dedicated channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The UE receives the command and configures itself accordingly but can not complete the handover. The SS checks that the handover is failed by checking that the UE transmits the HANDOVER FROM UTRAN FAILURE message to the SS using the old UTRAN configuration.

After the handover failure, the UE re-activates compressed mode (if configured) and resumes periodic measurement reporting including sending MEASUREMENT REPORT messages periodically to SS.

#### Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into U10 state in UTRAN cell 1. If the UE does not require compressed mode (refer ICS/IXIT), then goto step 1c.
1a	←		PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
1b	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
1c	←		MEASUREMENT CONTROL	SS provides GSM RSSI measurement control parameters to UE. Compressed mode for GSM RSSI measurement is started.
1d	→		MEASUREMENT REPORT	UE reports measurement results of GSM RSSI measurement to SS.
2	SS			The SS configures cell 9 as a GSM cell but without any traffic channel.
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM FR which does not exist in the GSM cell.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message via the old UTRAN configuration.
5a	→		MEASUREMENT REPORT	The SS shall verify that the UE resumes periodic measurement reporting for GSM RSSI measurements

Specific message contents

### PHYSICAL CHANNEL RECONFIGURATION (Step 1a)

Use the same message sub-type as in TS 34.108 titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links	
- DPCH compressed mode info	1
- TGPSI	Deactivate
- TGPS Status Flag	Not present
- TGCFN	
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	Undefined
- TGPL1	12
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TGPSI	2
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	GSM Initial BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	<a href="#">undefined</a> <sup>9</sup>
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	128
- T Reconfirm abort	Not Present

### MEASUREMENT CONTROL (Step 1c)

Information Element	Value/remark
Measurement Identity	15



Measurement Command	Setup
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Periodical reporting
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	Remove no inter-RAT cells
CHOICE Inter-RAT Cell Removal	0
- inter-RAT cell id	GSM
CHOICE Radio Access Technology	0
- Cell individual offset	Not present
- Cell selection and re-selection info	BSIC1
- BSIC	DCS 1800 band used
- Band indicator	1
- BCCH ARFCN	1
- inter-RAT cell id	GSM
CHOICE Radio Access Technology	0
- Cell individual offset	Not present
- Cell selection and re-selection info	BSIC2
- BSIC	DCS 1800 band used
- Band indicator	7
- BCCH ARFCN	Not present
- Cell for measurement	Not present
- inter-RAT measurement quantity	Not present
- Measurement quantity for UTRAN quality estimate	
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	not required
- inter-RAT reporting quantity	FALSE
UTRAN estimated quality	GSM
CHOICE system	FALSE
- Observed time difference to to GSM cell	
reporting indicator	
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOICE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOICE report criteria	
- Periodical reporting criteria	
- Amount of reporting	infinity
- Reporting interval	1000
Physical channel information elements	
- DPCH compressed mode status info	
- TGPS reconfiguration CFN	$(\text{Current CFN} + (256 - \text{TTI}/10\text{msec})) \bmod 256$
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS status flag	Activate
- TGCFN	$(\text{Current CFN} + (256 - \text{TTI}/10\text{msec})) \bmod 256$
- TGPSI	2
- TGPS status flag	Deactivate
- TGCFN	Not present

MEASUREMENT REPORT (Step 1d and step 5a)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to "1"
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to "7"
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

HANDOVER FROM UTRAN COMMAND-GSM

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-system message	
- System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as BIT STRING (1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1 and that the indicated target channel for GSM FR does not exist in the GSM cell

HANDOVER FROM UTRAN FAILURE

The contents of this message is identical to the HANDOVER FROM UTRAN FAILURE message specified in [9] TS 34.108 clause 9.

8.3.7.5.5 Test requirement

After step 4 the SS shall receive HANDOVER FROM UTRAN FAILURE message using the old UTRA configuration.

After step 5 the UE shall correctly report the GSM RSSI value.

<End of modified section>

<Start of modified section>

### 8.4.1.31 Measurement Control and Report: Inter-RAT measurement in CELL\_DCH state.

#### 8.4.1.31.1 Definition

#### 8.4.1.31.2 Conformance requirement

A UE supporting both FDD and GSM shall be able to perform the GSM RSSI measurement and the GSM Initial BSIC identification measurement.

If, according to its capabilities, the UE requires compressed mode to perform GSM RSSI measurements, the UE shall perform GSM RSSI measurements in the gaps of a compressed mode pattern sequence specified for GSM RSSI measurement purpose.

If, according to its capabilities, the UE requires compressed mode to perform GSM Initial BSIC identification measurements, the UE shall perform GSM Initial BSIC identification in a compressed mode pattern sequence specified for Initial BSIC identification measurement purpose.

#### Reference

3GPP TS 25.133, clause 8.1.2.5; 3GPP TS 25.331, clauses 8.6.7.6, 14.3.2.

#### 8.4.1.31.3 Test Purpose

Purpose of this test is to verify that UE is capable to perform GSM RSSI and GSM Initial BSIC identification measurements.

#### 8.4.1.31.4 Method of test

#### Initial Condition

System Simulator: 1 UTRAN FDD cell and 2 GSM cells.

Parameter	Unit	Cell 1 (GSM)	Cell 2 (GSM)
Test Channel	#	1	2
RF Signal Level	dBm	-70	-85
BCCCH ARFCN	#	1	7
CELL identity	#	0	1
BSIC	#	BSIC1	BSIC2

UE: CELL\_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

System Information Block type 11 nor 12 does not include Inter-RAT measurement system information.

#### Related ICS/IXIT statements

- Compressed mode required yes/no

#### Test Procedure

The UE is brought to the CELL\_DCH state after a successful outgoing call attempt. If the UE requires compressed mode (refer ICS/IXIT), the SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters. Two compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message.

The first RRC: MEASUREMENT CONTROL message is used to provide measurement control parameters (GSM RSSI) to the UE and to start compressed mode for the measurement if required according to the UE capabilities. The UE replies according to request by sending RRC: MEASUREMENT REPORT messages periodically to SS. Reporting period is 1000 ms.

After two RRC: MEASUREMENT REPORT messages, the SS sends a second RRC: MEASUREMENT CONTROL message to start GSM Initial BSIC identification measurement. The UE replies similarly as in GSM RSSI measurement case but now with a period of 12000ms.

The SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

#### Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1. If the UE does not require compressed mode (refer ICS/IXIT), then goto step 4.
2		←	PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4		←	MEASUREMENT CONTROL	SS provides GSM RSSI measurement control parameters to UE. If the UE requires compressed mode (refer ICS/IXIT), compressed mode for GSM RSSI measurement is started.
5		→	MEASUREMENT REPORT	UE reports measurement results of GSM RSSI measurement to SS.
6		→	MEASUREMENT REPORT	Next periodical measurement report.
7		←	MEASUREMENT CONTROL	SS provides GSM Initial BSIC identification measurement control parameters to UE. If the UE requires compressed mode (refer ICS/IXIT), compressed mode for GSM Initial BSIC identification measurement is started.
8		→	MEASUREMENT REPORT	UE reports measurement results of GSM Initial BSIC identification measurement to SS.
9		→	MEASUREMENT REPORT	Next periodical measurement report.
10		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

## Specific Message Content

## PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type as in TS 34.108 titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links	
- DPCH compressed mode info	1
- TGPSI	Deactivate
- TGPS Status Flag	Not present
- TGCFN	
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined
- TGPL1	12
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TGPSI	2
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	GSM Initial BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined <sup>9</sup>
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	128
- T Reconfirm abort	Not Present

## MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	15

Measurement Command	Setup
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Periodical reporting
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	Remove no inter-RAT cells
CHOICE Inter-RAT Cell Removal	0
- inter-RAT cell id	GSM
CHOICE Radio Access Technology	0
- Cell individual offset	Not present
- Cell selection and re-selection info	BSIC1
- BSIC	DCS 1800 band used
- Band indicator	1
- BCCH ARFCN	1
- inter-RAT cell id	GSM
CHOICE Radio Access Technology	0
- Cell individual offset	Not present
- Cell selection and re-selection info	BSIC2
- BSIC	DCS 1800 band used
- Band indicator	7
- BCCH ARFCN	Not present
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not present
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	not required
- inter-RAT reporting quantity	
UTRAN estimated quality	FALSE
CHOICE system	GSM
- Observed time difference to to GSM cell	FALSE
reporting indicator	
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOICE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOICE report criteria	
- Periodical reporting criteria	
- Amount of reporting	infinity
- Reporting interval	1000
Physical channel information elements	
- DPCCH compressed mode status info	If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present. (Current CFN + (256 – TTI/10msec))mod 256
- TGPS reconfiguration CFN	
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS status flag	Activate
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	Deactivate
- TGCFN	Not present

MEASUREMENT REPORT, if the UE requires compressed mode (refer ICS/IXIT) (Step 5 and step 6)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"

- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to "1"
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to "7"
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

MEASUREMENT REPORT, if the UE doesn't requires compressed mode (refer ICS/IXIT) (Step 5 and step 6)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	verified BSIC
- Inter-RAT cell id	Check that is set to "0"
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Non verified BSIC
- Inter-RAT cell id	Check that is set to "1"
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

## MEASUREMENT CONTROL (Step 7)

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Modify
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Periodical reporting
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	Not present
- inter-RAT measurement object list	Not present
- inter-RAT measurement quantity	Not present
- Measurement quantity for UTRAN quality estimate	
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	required
- inter-RAT reporting quantity	FALSE
UTRAN estimated quality	GSM
CHOICE system	FALSE
- Observed time difference to to GSM cell reporting indicator	TRUE
- GSM carrier RSSI reporting indicator	
- Reporting cell status	
CHOICE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOICE report criteria	
- Periodical reporting criteria	infinity
- Amount of reporting	12000
- Reporting interval	
Physical channel information elements	
- DPCH compressed mode status info	If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present.
	(Current CFN + (256 – TTI/10msec))mod 256
- TGPS reconfiguration CFN	1
- Transmission gap pattern sequence	Deactivate
- TGPSI	Not present
- TGPS status flag	2
- TGCFN	Activate
- TGPSI	(Current CFN + (256 – TTI/10msec))mod 256
- TGPS status flag	
- TGCFN	



## MEASUREMENT REPORT (Step 8 and step 9)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Verified BSIC
- Inter-RAT cell id	Check that is set to "0"
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- Inter-RAT cell id	Check that is set to "1"
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

## 8.4.1.31.5 Test Requirement

In step 5 and step 6 UE reports correctly GSM RSSI values.

In step 8 and step 9 UE reports correctly BSIC values.

Reporting period is the requested one.

## 8.4.1.32 Void

## 8.4.1.33 Measurement Control and Report: Inter-RAT measurement, event 3a

## 8.4.1.33.1 Definition

## 8.4.1.33.2 Conformance requirement

- When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE "Threshold own system" and the hysteresis and time to trigger conditions are fulfilled and the estimated quality of the other system is above the value of the IE "Threshold other system" and the hysteresis and time to trigger conditions are fulfilled.
- If the IE "DPCH Compressed Mode Status Info" is present, [in the MEASUREMENT CONTROL message]:
  - after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:
    - activate the pattern sequence stored in the variable TGPS\_IDENTITY corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate" at the time indicated by IE "TGCFN"; and
    - begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
    - if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:
      - start the concerned pattern sequence immediately at that CFN;
  - not alter pattern sequences stored in variable TGPS\_IDENTITY, but not identified in IE "TGPSI"
- The UE shall perform GSM RSSI measurements in the gaps of compressed mode pattern sequence specified for GSM RSSI measurement purpose. The UE shall perform Initial BSIC identification in compressed mode pattern sequence specified for Initial BSIC identification measurement purpose. The UE shall be able to measure the

"Observed time difference to GSM cell" during a compressed mode pattern sequence configured for this purpose. The UE shall perform BSIC re-confirmation in compressed mode pattern sequence specified for BSIC re-confirmation measurement purpose.

4. If the IE "Inter-RAT measurement quantity" is received in a MEASUREMENT CONTROL message and CHOICE system is GSM, the UE shall:
  - if IE "BSIC verification required" is set to "required", for cells that match any of the BCCH ARFCN and BSIC combinations in the list of inter-RAT cells that the UE has received in IE "Inter-RAT cell info list", and that has a "verified" BSIC:
    - report measurement quantities according to IE "inter-RAT reporting quantity" taking into account the restrictions defined in TS 25.331 clause 8.6.7.6;
    - trigger inter-RAT events according to IE "inter-RAT measurement reporting criteria"; and
    - perform event evaluation for event-triggered reporting after BSIC has been verified for a GSM cell
    - indicate non-verified BSIC for a GSM cell in the "Inter-RAT measured results list" IE
5. The UE shall include measured results in MEASUREMENT REPORT as specified in the IE "Inter-RAT reporting quantity".
6. If IE "Observed time difference to GSM cell Reporting indicator " is set to "TRUE" [, the UE shall]:
  - include optional IE "Observed time difference to GSM cell" with the value set to the time difference to that GSM cell for the GSM cells that have a BSIC that is "verified", and that match any of the BCCH ARFCN and BSIC combinations in the list of inter-RAT cells that the UE has received in IE "Inter-RAT cell info list".
  - if IE "GSM Carrier RSSI" is set to "TRUE"[, the UE shall]:
    - include optional IE "GSM Carrier RSSI" with a value set to the measured RXLEV to that GSM cell in IE "Inter-RAT measured results list".
  - if the BSIC of reported GSM cell is "verified"[, the UE shall]:
    - set the CHOICE BSIC to "Verified BSIC" and IE "inter-RAT cell id" to the value that GSM cell had in the IE "Inter-RAT cell info list";
7. If the IE "Reporting Cell Status" is received, the UE shall set the IE "Measured Results" in MEASUREMENT REPORT as follows.
  - the maximum number of the IE "Cell Measured Results" to be included in the IE "Measured Results" is the number specified in "Reporting Cell Status".

## Reference

3GPP TS 25.331 clauses 8.4.1.3, 8.6.7.5, 8.6.7.6, 8.6.7.9, 14.3.1.1, 14.3.2.1, 14.3.2.2, 14.3.2.3.

### 8.4.1.33.3 Test Purpose

1. To confirm that the UE starts compressed mode and inter-RAT measurements when so required by the network in a MEASUREMENT CONTROL message.
2. To confirm that the UE sends MEASUREMENT REPORT message if event 3a is configured, if the quality of the currently used UTRAN frequency is below a given threshold and the estimated quality of the other system is above a certain threshold.
3. To confirm that the hysteresis and time to trigger behaviours for event 3a are correctly implemented.
4. To confirm that the UE verifies the BSIC of the cell triggering the event if so required by UTRAN and if the proper compressed mode patterns have been configured in the UE by UTRAN.
5. To confirm that the content of the MEASUREMENT REPORT sent by the UE is according to what was required by UTRAN.

NOTE: Test purpose 1 verifies conformance requirement 1 and 2.

NOTE: Test purpose 2 and 3 verifies conformance requirement 1.

NOTE: Test purpose 4 verifies conformance requirement 2, 3 and 4.

NOTE: Test purpose 5 verifies conformance requirement 4, 5, 6 and 7.

#### 8.4.1.33.4 Method of test

##### Initial Condition

System simulator: 1 UTRAN FDD cell and 3 GSM cells. The initial configurations of the 3 cells in the SS shall follow the values indicated in the column marked T0. The table is found in "Test procedure".

UE: CELL\_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

##### Related ICS/IXIT statements

- Compressed mode required            yes/no

##### Test procedure

**Table 8.4.1.33.4-1**

Parameter	Unit	Cell 1 (GSM)					Cell 2 (GSM)					Cell 3 (GSM)				
		T0	T1	T2	T3	T4	T0	T1	T2	T3	T4	T0	T1	T2	T3	T4
Test Channel	#	GSM Ch.1					GSM Ch.2					GSM Ch.3				
BCCH ARFCN	#	1					7					39				
CELL identity	#	0					1					2				
BSIC	#	BSIC 1					BSIC 2					BSIC 3				
RF Signal Level	dBm	-85	-85	-70	-76	-70	-85	-85	-85	-84	-84	-90	-90	-90	-90	-90

**Table 8.4.1.33.4-2**

Parameter	Unit	Cell 1 (UTRA)				
		T0	T1	T2	T3	T4
UTRA RF Channel Number		Ch.1				
CPICH Ec	dBm /3.84 Mhz	-60	-80	-80	-80	-60

The two tables above illustrate the downlink power to be applied for the two cells at various instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1", "T2", "T3" and "T4" indicate the values to be applied subsequently.

The UE is initially in CELL\_DCH, state 6-9 as specified in clause 7.4 of TS 34.108. UTRA cell 1 is the only cell in the active set of the UE. If the UE requires compressed mode (refer ICS/IXIT), the SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters to the UE. Three compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message to the UE, to set up inter-RAT measurements. Event 3a is set up in this message, and if the UE requires compressed mode (refer ICS/IXIT), compressed mode is activated.

At instant T1, the CPICH Ec drops as described in table 8.4.1.33.4-2.

At instant T2, the RF signal for GSM cell 1 increases, and crosses the threshold for the other system defined for event 3a.

After reception of the MEASUREMENT REPORT message, at instant T3, the RF signal strength for GSM cell 2 increases but remains below the threshold for the other system for event 3a. During that time, the RF signal strength for GSM cell 1 decreases, but remains above the releasing condition for event 3a.

At instant T4, the RF signal strength for GSM cell 1 increases above the threshold for the other system for event 3a+hysteresis. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

## Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1. If the UE does not require compressed mode (refer ICS/IXIT), then goto step 4.
2		←	PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4		←	MEASUREMENT CONTROL	SS configures event 3a in the UE. If the UE requires compressed mode (refer ICS/IXIT), compressed mode is started.
5				SS re-adjusts the downlink transmission power settings according to columns "T1" in tables 8.4.1.33.4-1 and 8.4.1.33.4-2.
6				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
7				SS re-adjusts the downlink transmission power settings according to columns "T2" in tables 8.4.1.33.4-1 and 8.4.1.33.4-2.
8		→	MEASUREMENT REPORT	After about 1.4s, the UE sends a MEASUREMENT REPORT to SS triggered by event 3a.
9				SS re-adjusts the downlink transmission power settings according to columns "T3" in tables 8.4.1.33.4-1 and 8.4.1.33.4-2.
10				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
11				SS re-adjusts the downlink transmission power settings according to columns "T4" in tables 8.4.1.33.4-1 and 8.4.1.33.4-2.
12				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
13		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

## Specific Message Content

## PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links	
- DPCH compressed mode info	1
- TGPSI	Deactivate
- TGPS Status Flag	Not present
- TGCFN	
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined
- TGPL1	12
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TGPSI	2
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	GSM BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined <sup>9</sup>
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	66
- T Reconfirm abort	Not Present
- TGPSI	3
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	GSM BSIC re-confirmation
- TGPRC	Infinity

- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined <sup>9</sup>
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	5 s

MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells (No Data)
- Remove all inter-RAT cells	MaxCellMeas=3
New inter-RAT cells (1 to <MaxCellMeas>)	0
- inter-RAT cell id	GSM
CHOICE Radio Access Technology	0
- Cell individual offset	Not present
- Cell selection and re-selection info	BSIC1
- BSIC	DCS 1800 band used
- Band indicator	1
- BCCH ARFCN	1
- inter-RAT cell id	GSM
CHOICE Radio Access Technology	0
- Cell individual offset	Not present
- Cell selection and re-selection info	BSIC2
- BSIC	DCS 1800 band used
- Band indicator	7
- BCCH ARFCN	2
- inter-RAT cell id	GSM
CHOICE Radio Access Technology	0
- Cell individual offset	Not present
- Cell selection and re-selection info	BSIC3
- BSIC	DCS 1800 band used
- Band indicator	2
- BCCH ARFCN	Not present
- Cell for measurement	
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	
- Intra-frequency measurement quantity	
- Filter coefficient	0
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0

<ul style="list-style-type: none"> <li>- BSIC verification required</li> <li>- inter-RAT reporting quantity CHOICE system <ul style="list-style-type: none"> <li>- Observed time difference to to GSM cell reporting indicator</li> <li>- GSM carrier RSSI reporting indicator</li> </ul> </li> <li>CHOICE report criteria <ul style="list-style-type: none"> <li>- Inter-RAT measurements reporting criteria <ul style="list-style-type: none"> <li>- Parameters required for each event (1 to&lt;maxMeasEvent&gt;) <ul style="list-style-type: none"> <li>- Inter-RAT event identity</li> <li>- Threshold own system</li> <li>- W</li> <li>- Threshold other system</li> <li>- Hysteresis</li> <li>- Time to Trigger</li> <li>- Reporting cell status</li> </ul> </li> <li>- Maximum number of reported cells</li> </ul> </li> </ul> </li> </ul> <li>Physical channel information elements <ul style="list-style-type: none"> <li>- DPCH compressed mode status info</li> </ul> </li> <li>- TGPS reconfiguration CFN</li> <li>- Transmission gap pattern sequence (1 to &lt;MaxTGPS&gt;) <ul style="list-style-type: none"> <li>- TGPSI</li> <li>- TGPS status flag</li> <li>- TGCFN</li> <li>- TGPSI</li> <li>- TGPS status flag</li> <li>- TGCFN</li> <li>- TGPSI</li> <li>- TGPS status flag</li> <li>- TGCFN</li> </ul> </li>	<p>required</p> <p>GSM FALSE</p> <p>TRUE</p> <p>&lt;MaxMeasEvent&gt;=1 3a -66 0 -80 5 640 ms Report cells within active set or within virtual active set or of the other RAT 2 cells</p> <p>If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present. (Current CFN + (250 – TTI/10msec))mod 256 &lt;MaxTGPS&gt;=3</p> <p>1 Activate (Current CFN + (252 – TTI/10msec))mod 256 2 Activate (Current CFN + (254 – TTI/10msec))mod 256 3 Activate (Current CFN + (250 – TTI/10msec))mod 256</p>
---	---



## MEASUREMENT REPORT (Step 8)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable. RXLEV is mapped to a value between 0 and 63. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit. When mapping the RXLEV value to the RSSI bit string, the first/ leftmost bit of the bit string contains the most significant bit.
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to 0.
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 1
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
- Inter-RAT event identity	Check that this is set to 3a
- Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 0.

## 8.4.1.33.5 Test requirement

The UE shall not send any measurement report between instants T1 and T2.

Event 3a shall be triggered in the UE (i.e.the transmission of the MEASUREMENT REPORT) after instant T2.

Between instants T2 and T3, no MEASUREMENT REPORT message shall be received from the UE (since the hysteresis condition for triggering event 3a is not fulfilled).

No MEASUREMENT REPORT message shall be received from the UE after instant T4 (since the signal strength for cell 1 has not dropped under Threshold for event 3a-hysteresis).

## 8.4.1.34 Measurement Control and Report: Inter-RAT measurement, event 3b

## 8.4.1.34.1 Definition

## 8.4.1.34.2 Conformance requirement

If the IE "Inter-RAT cell info list" is received in a MEASUREMENT CONTROL message, the UE shall update the variable CELL\_INFO\_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Inter-RAT cells" is received, at the position indicated by the IE "Inter-RAT cell id":
  - clear the cell information stored in the variable CELL\_INFO\_LIST; and
  - mark the position "vacant";
- if the IE "New Inter-RAT cells" is received, for each cell, and in the same order as the cells appear in the IE:
  - update the variable CELL\_INFO\_LIST as follows:

- if the IE "Inter-RAT cell id" is received:
  - store received cell information at this position in the Inter-RAT cell info list in the variable CELL\_INFO\_LIST, possibly overwriting any existing information in this position; and
  - mark the position "occupied";
- if the IE "Inter-RAT cell id" is not received:
  - store the received cell information at the first vacant position in ascending order in the Inter-RAT cell info list in the variable CELL\_INFO\_LIST; and
- mark the position as "occupied";

When event 3b is configured in the UE within a measurement, the UE shall:

- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
  - 2> if equation 1 below has been fulfilled for a time period indicated by "time to trigger" for one or several GSM cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
    - 3> if the inter-RAT cell id of any of those GSM cell is not stored in the variable TRIGGERED\_3B\_EVENT:
      - 4> store the inter-RAT cell ids of the GSM cells that triggered the event and that were not previously stored in the variable TRIGGERED\_3B\_EVENT into that variable;
      - 4> send a measurement report with IEs set as below:
        - 5> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3b", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cells that triggered the event (worst one first);
        - 5> set the IE "measured results" and the IE "additional measured results" according to TS 25.331 subclause 8.4.2, not taking into account the cell individual offset;
    - 2> if equation 2 below is fulfilled for a GSM cell whose inter-RAT cell id is stored in the variable TRIGGERED\_3B\_EVENT:
      - 3> remove the inter-RAT cell id of that GSM cell from the variable TRIGGERED\_3B\_EVENT.
- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
  - 2> if equation 1 below has been fulfilled for a time period indicated by "time to trigger" for one or several of the BCCH ARFCNs considered in that inter-RAT measurement:
    - 3> if any of those BCCH ARFCN is not stored into the variable TRIGGERED\_3B\_EVENT:
      - 4> store the BCCH ARFCNs that triggered the event and that were not previously stored in the variable TRIGGERED\_3B\_EVENT into that variable;
      - 4> send a measurement report with IEs set as below:
        - 5> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3b", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to BCCH ARFCNs that triggered the event (worst one first);
        - 5> set the IE "measured results" and the IE "additional measured results" according to 8.4.2, not taking into account the cell individual offset;
    - 2> if equation 2 below is fulfilled for a BCCH ARFCN that is stored in the variable TRIGGERED\_3B\_EVENT:
      - 3> remove that BCCH ARFCN from the variable TRIGGERED\_3B\_EVENT.

Triggering condition:

Equation 1:

$$M_{Other\ RAT} + CIO_{Other\ RAT} \leq T_{Other\ RAT} - H_{3b} / 2$$

The variables in the formula are defined as follows:

$M_{Other\ RAT}$  is the measurement quantity for the cell of the other system.

$CIO_{Other\ RAT}$  is the cell individual offset for the cell of the other system.

$T_{Other\ RAT}$  is the absolute threshold that applies for the other system in that measurement.

$H_{3b}$  is the hysteresis parameter for event 3b.

Leaving triggered state condition:

Equation 2:

$$M_{Other\ RAT} + CIO_{Other\ RAT} > T_{Other\ RAT} + H_{3b} / 2$$

The variables in the formula are defined as follows:

$M_{Other\ RAT}$  is the measurement quantity for the cell of the other system.  $M_{Other\ RAT}$  is expressed in dBm.

$CIO_{Other\ RAT}$  is the cell individual offset for the cell of the other system.

$T_{Other\ RAT}$  is the absolute threshold that applies for the other system in that measurement.

$H_{3b}$  is the hysteresis parameter for event 3b.

## Reference

3GPP TS 25.331 clause 8.6.7.3, 14.3.1.2

### 8.4.1.34.3 Test Purpose

- 1 To confirm that the UE sends MEASUREMENT REPORT message if event 3b is configured, if the estimated quality of the other system is below a given threshold.
- 2 To confirm that the hysteresis and time to trigger behaviours for event 3b are correctly implemented. To confirm that the UE updates the list of inter-RAT cells it stores according to what is ordered in the MEASUREMENT CONTROL messages received from UTRAN.

### 8.4.1.34.4 Method of test

#### Initial Condition

System simulator: 1 UTRAN FDD cell and 3 GSM cells. The initial configurations of the 4 cells in the SS shall follow the values indicated in the column marked T0. The table is found in "Test procedure".

UE: CELL\_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

#### Related ICS/IXIT statements

- Compressed mode required            yes/no

Test procedure

**Table 8.4.1.34.4-1**

Parameter	Unit	Cell 1 (GSM)		Cell 2 (GSM)		Cell 3 (GSM)	
		T0	T1	T0	T1	T0	T1
Test Channel	#	GSM Ch.1		GSM Ch.2		GSM Ch.3	
BCCH ARFCN	#	1		7		39	
CELL identity	#	0		1		2	
BSIC	#	BSIC 1		BSIC 2		BSIC 3	
RF Signal Level	dBm	-70	-90	-70	-70	-90	-90

The table above illustrate the downlink power to be applied for the cells at various instants of the test execution. Column marked "T0" denotes the initial conditions, while column marked "T1" indicates the values to be applied subsequently.

The UE is initially in CELL\_DCH, state 6-9 as specified in clause 7.4 of TS 34.108. UTRA cell 1 is the only cell in the active set of the UE. If the UE requires compressed mode (refer ICS/IXIT), the SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters to the UE. Three compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message to the UE, to set up inter-RAT measurements. Event 3b is set up in this message, and if the UE requires compressed mode (refer ICS/IXIT), compressed mode is activated. The monitored GSM cells at measurement establishment are GSM cells 1 and 2.

At instant T1, the RF signal strength for GSM cell 1 drops as described in table 8.4.1.34.4-1.

When the MEASUREMENT REPORT has been received by the SS, a MEASUREMENT CONTROL message is sent to the UE, to add GSM cell 3 to the monitored GSM cells.

A second MEASUREMENT REPORT triggered by event 3b shall be received shortly after by the SS. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

## Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1. If the UE does not require compressed mode (refer ICS/IXIT), then goto step 4.
2		←	PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4		←	MEASUREMENT CONTROL	SS configures event 3b in the UE. If the UE requires compressed mode (refer ICS/IXIT), compressed mode is started.
5				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
6				SS re-adjusts the downlink transmission power settings according to columns "T1" in tables 8.4.1.34.4-1.
7		→	MEASUREMENT REPORT	After about 0.8 s, the UE sends a MEASUREMENT REPORT to SS triggered by event 3b.
8		←	MEASUREMENT CONTROL	SS adds GSM cell 3 to the list of the monitored GSM cells.
9		→	MEASUREMENT REPORT	After about 0.8 s, the UE sends a MEASUREMENT REPORT to SS triggered by event 3b.
10		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Content

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links <ul style="list-style-type: none"> <li>- DPCH compressed mode info</li> <li>- TGPSI</li> <li>- TGPS Status Flag</li> <li>- TGCFN</li> <li>- Transmission gap pattern sequence configuration parameters</li> <li>- TGMP</li> <li>- TGPRC</li> <li>- TGSN</li> <li>- TGL1</li> <li>- TGL2</li> <li>- TGD</li> <li>- TGPL1</li> <li>- TGPL2</li> <li>- RPP</li> <li>- ITP</li> <li>CHOICE UL/DL Mode                             <ul style="list-style-type: none"> <li>- Downlink compressed mode method</li> <li>- Uplink compressed mode method</li> </ul> </li> <li>- Downlink frame type</li> <li>- DeltaSIR1</li> <li>- DeltaSIRAfter1</li> <li>- DeltaSIR2</li> <li>- DeltaSIR2After2</li> <li>- N identify abort</li> <li>- T Reconfirm abort</li> <li>- TGPSI</li> <li>- TGPS Status Flag</li> <li>- TGCFN</li> <li>- Transmission gap pattern sequence configuration parameters</li> <li>- TGMP</li> <li>- TGPRC</li> <li>- TGSN</li> <li>- TGL1</li> <li>- TGL2</li> <li>- TGD</li> <li>- TGPL1</li> <li>- TGPL2</li> <li>- RPP</li> <li>- ITP</li> <li>CHOICE UL/DL Mode                             <ul style="list-style-type: none"> <li>- Downlink compressed mode method</li> <li>- Uplink compressed mode method</li> </ul> </li> <li>- Downlink frame type</li> <li>- DeltaSIR1</li> <li>- DeltaSIRAfter1</li> <li>- DeltaSIR2</li> <li>- DeltaSIR2After2</li> <li>- N identify abort</li> <li>- T Reconfirm abort</li> <li>- TGPSI</li> <li>- TGPS Status Flag</li> <li>- TGCFN</li> <li>- Transmission gap pattern sequence configuration parameters</li> <li>- TGMP</li> <li>- TGPRC</li> </ul>	1 Deactivate Not present  GSM Carrier RSSI Measurement Infinity 4 7 Not present undefined 12 Not present Mode 0 Mode 0 UL&DL or UL-only or DL-only (depends on UE's Measurement capability) SF/2 SF/2 A 1.0 0.5 Not Present Not Present Not Present Not Present 2 Deactivate Not present  GSM BSIC identification Infinity 4 7 Not present undefined 8 Not present Mode 0 Mode 0 UL&DL or UL-only or DL-only (depends on UE's Measurement capability) SF/2 SF/2 A 1.0 0.5 Not Present Not Present 66 Not Present 3 Deactivate Not present  GSM BSIC re-confirmation Infinity

- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	<a href="#">undefined</a> <sup>0</sup>
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	5 s

## MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells
- Remove all inter-RAT cells	(No Data)
New inter-RAT cells (1 to <MaxCellMeas>)	MaxCellMeas=2
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not included
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	required
- inter-RAT reporting quantity	
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
CHOICE report criteria	
- Inter-RAT measurements reporting criteria	
- Parameters required for each event (1 to <maxMeasEvent>)	<MaxMeasEvent>=1
- Inter-RAT event identity	3b
- Threshold own system	Not included
- W	Not included
- Threshold other system	-80
- Hysteresis	2
- Time to Trigger	60 ms
- Reporting cell status	Report cells within active set or within virtual active set or of the other RAT
- Maximum number of reported cells	3
Physical channel information elements	
- DPCH compressed mode status info	If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present.
- TGPS reconfiguration CFN	(Current CFN + (250 – TTI/10msec))mod 256
- Transmission gap pattern sequence (1 to <MaxTGPS>)	<MaxTGPS>=3
- TGPSI	1
- TGPS status flag	Activate
- TGCFN	(Current CFN + (252 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	Activate



- TGCFN	(Current CFN + (254 – TTI/10msec))mod 256
- TGPSI	3
- TGPS status flag	Activate
- TGCFN	(Current CFN + (250 – TTI/10msec))mod 256

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable. RXLEV is mapped to a value between 0 and 63. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit. When mapping the RXLEV value to the RSSI bit string, the first/ leftmost bit of the bit string contains the most significant bit.
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to 1
- Observed time difference to GSM cell	Check that the IE is not included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that it is set to 0.
- Observed time difference to GSM cell	Check that the IE is not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
- Inter-RAT event identity	Check that this is set to 3b
- Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 0.

MEASUREMENT CONTROL (Step 8)

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Not present
- Periodic Reporting / Event Trigger Reporting Mode	Not present
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove no inter-RAT cells
New inter-RAT cells (1 to <MaxCellMeas>)	MaxCellMeas=1
- inter-RAT cell id	Not present
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC3
- Band indicator	DCS 1800 band used
- BCCH ARFCN	2
- Cell for measurement	Not present
- inter-RAT measurement quantity	Not present
CHOICE report criteria	
- Inter-RAT measurements reporting criteria	
- Parameters required for each event (1 to <maxMeasEvent>)	Not Present
Physical channel information elements	Not present

MEASUREMENT REPORT (Step 9)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for three GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable. RXLEV is mapped to a value between 0 and 63. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit. When mapping the RXLEV value to the RSSI bit string, the first/ leftmost bit of the bit string contains the most significant bit.
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to 1
- Observed time difference to GSM cell	Check that the IE is not included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 0 or 2.
- Observed time difference to GSM cell	Check that the IE is not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 0 or 2 and that this inter-RAT cell id is different from the two previous inter-RAT cell id.
- Observed time difference to GSM cell	Check that the IE is not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
- Inter-RAT event identity	Check that this is set to 3b
- Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 2.

#### 8.4.1.34.5 Test requirement

Between instants T0 and T1, the UE shall not send any MEASUREMENT REPORT message to the SS.

Event 3b shall be triggered in the UE (i.e. the transmission of the first MEASUREMENT REPORT message shall begin) after instant T1.

After the reception by the UE of the second MEASUREMENT CONTROL message, the UE shall begin to transmit the second MEASUREMENT REPORT message (since the signal strength for GSM cell 3 is below the threshold for triggering event 3b).

### 8.4.1.35 Measurement Control and Report: Inter-RAT measurement, event 3c

#### 8.4.1.35.1 Definition

#### 8.4.1.35.2 Conformance requirement

When event 3c is configured in the UE within a measurement, the UE shall:

- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
  - 2> if equation 1 below has been fulfilled for a time period indicated by "time to trigger" for one or several GSM cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
    - 3> if the inter-RAT cell id of any of those GSM cell is not stored in the variable TRIGGERED\_3C\_EVENT:
      - 4> store the Inter-RAT cell ids of the GSM cells that triggered the event and that were not previously stored in the variable TRIGGERED\_3C\_EVENT into that variable;
      - 4> send a measurement report with IEs set as below:
        - 5> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3c", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cells that triggered the event (best one first);
        - 5> set the IE "measured results" and the IE "additional measured results" according to 8.4.2, not taking into account the cell individual offset;
    - 2> if equation 2 below is fulfilled for a GSM cell whose inter-RAT cell id is stored in the variable TRIGGERED\_3C\_EVENT:
      - 3> remove the inter-RAT cell id of that GSM cell from the variable TRIGGERED\_3C\_EVENT.
  - 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
    - 2> if equation 1 below has been fulfilled for a time period indicated by "time to trigger" for one or several of the BCCH ARFCNs considered in that inter-RAT measurement:
      - 3> if any of those BCCH ARFCN is not stored into the variable TRIGGERED\_3C\_EVENT:
        - 4> store the BCCH ARFCNs that triggered the event and that were not previously stored in the variable TRIGGERED\_3C\_EVENT into that variable;
        - 4> send a measurement report with IEs set as below:
          - 5> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3c", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to BCCH ARFCNs that triggered the event (best one first);
          - 5> set the IE "measured results" and the IE "additional measured results" according to TS 25.331 subclause 8.4.2, not taking into account the cell individual offset;

2> if equation 2 is fulfilled for a BCCH ARFCN that is stored in the variable TRIGGERED\_3C\_EVENT:

3> remove that BCCH ARFCN from the variable TRIGGERED\_3C\_EVENT.

Triggering condition:

Equation 1:

$$M_{Other\ RAT} + CIO_{Other\ RAT} \geq T_{Other\ RAT} + H_{3c} / 2$$

The variables in the formula are defined as follows:

$M_{Other\ RAT}$  is the measurement quantity for the cell of the other system.  $M_{Other\ RAT}$  is expressed in dBm.

$CIO_{Other\ RAT}$  is the cell individual offset for the cell of the other system.

$T_{Other\ RAT}$  is the absolute threshold that applies for the other system in that measurement.

$H_{3c}$  is the hysteresis parameter for event 3c.

Leaving triggered state condition:

Equation 2:

$$M_{Other\ RAT} + CIO_{Other\ RAT} < T_{Other\ RAT} - H_{3c} / 2$$

The variables in the formula are defined as follows:

$M_{Other\ RAT}$  is the measurement quantity for the cell of the other system.  $M_{Other\ RAT}$  is expressed in dBm.

$CIO_{Other\ RAT}$  is the cell individual offset for the cell of the other system.

$T_{Other\ RAT}$  is the absolute threshold that applies for the other system in that measurement.

$H_{3c}$  is the hysteresis parameter for event 3c.

Reference

3GPP TS 25.331 clauses 14.3.1.3, 8.4.2.2.

#### 8.4.1.35.3 Test Purpose

- 1 To confirm that the UE sends MEASUREMENT REPORT message if event 3c is configured, and if the quality of the other system becomes better than the given threshold for event 3c.
- 2 To confirm that no other UE MEASUREMENT REPORT message is sent by the UE for a cell that has already triggered event 3c as long as the hysteresis condition for triggering once again event 3c has not been fulfilled.

#### 8.4.1.35.4 Method of test

Initial Condition

System simulator: 1 UTRAN FDD cell and 2 GSM cells. The initial configurations of the 4 cells in the SS shall follow the values indicated in the column marked T0. The table is found in "Test procedure".

UE: CELL\_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statements

- Compressed mode required            yes/no

## Test procedure

Table 8.4.1.35.4-1

Parameter	Unit	Cell 1 (GSM)				Cell 2 (GSM)			
		T0	T1	T2	T3	T0	T1	T2	T3
Test Channel	#	GSM Ch.1				GSM Ch.2			
BCCH ARFCN	#	1				7			
CELL identity	#	0				1			
BSIC	#	BSIC 1				BSIC 2			
RF Signal Level	dBm	-90	-75	-80	-75	-75	-75	-75	-75

The table above illustrate the downlink power to be applied for the two cells at various instants of the test execution. Column marked "T0" denotes the initial conditions, while column marked "T1", "T2" and "T3" indicate the values to be applied subsequently.

The UE is initially in CELL\_DCH, state 6-9 as specified in clause 7.4 of TS 34.108. UTRA cell 1 is the only cell in the active set of the UE. If the UE requires compressed mode (refer ICS/IXIT), the SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters to the UE. Three compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message to the UE, to set up inter-RAT measurements. Event 3c is set up in this message, and if the UE requires compressed mode (refer ICS/IXIT), compressed mode is activated.

At instant T1, the RF signal strength for GSM cell 1 increases as described in table 8.4.1.35.4-1.

At instant T2, the RF signal strength for GSM cell 1 drops as described in table 8.4.1.35.4-1, and at instant T3, it increases again to its previous level. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

## Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1. If the UE does not require compressed mode (refer ICS/IXIT), then goto step 4.
2		←	PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4		←	MEASUREMENT CONTROL	SS configures event 3c in the UE. If the UE requires compressed mode (refer ICS/IXIT), compressed mode is started.
5				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
6				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.35.4-1.
7		→	MEASUREMENT REPORT	After about 0.9 s, the UE sends a MEASUREMENT REPORT to SS triggered by event 3b.
8				SS re-adjusts the downlink transmission power settings according to columns "T2" in table 8.4.1.35.4-1.
9				SS re-adjusts the downlink transmission power settings according to columns "T3" in table 8.4.1.35.4-1.
10				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
11		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

## Specific Message Content

## PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links	
- DPCH compressed mode info	1
- TGPSI	Deactivate
- TGPS Status Flag	Not present
- TGCFN	
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined
- TGPL1	12
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TGPSI	2
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	GSM BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined <sup>9</sup>
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	66
- T Reconfirm abort	Not Present
- TGPSI	3
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	GSM BSIC re-confirmation
- TGPRC	Infinity

- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined <sup>9</sup>
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	5 s

MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells (No Data)
- Remove all inter-RAT cells	MaxCellMeas=2
New inter-RAT cells (1 to <MaxCellMeas>)	0
- inter-RAT cell id	
CHOICE Radio Access Technology	GSM
- Cell individual offset	10
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	-3
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not included
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	required
- inter-RAT reporting quantity	
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
CHOICE report criteria	
- Inter-RAT measurements reporting criteria	
- Parameters required for each event (1 to <maxMeasEvent>)	<MaxMeasEvent>=1
- Inter-RAT event identity	3c



<ul style="list-style-type: none"> <li>- Threshold own system</li> <li>- W</li> <li>- Threshold other system</li> <li>- Hysteresis</li> <li>- Time to Trigger</li> <li>- Reporting cell status</li> </ul>	<p>Not included</p> <p>Not included</p> <p>-74</p> <p>5</p> <p>100 ms</p> <p>Report cells within active set or within virtual active set or of the other RAT</p> <p>2</p>
<p>Physical channel information elements</p> <ul style="list-style-type: none"> <li>- DPCH compressed mode status info</li> </ul>	<p>If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present.</p> <p>(Current CFN + (250 – TTI/10msec))mod 256</p> <p>&lt;MaxTGPS&gt;=3</p>
<ul style="list-style-type: none"> <li>- TGPS reconfiguration CFN</li> <li>- Transmission gap pattern sequence (1 to &lt;MaxTGPS&gt;)</li> <li>- TGPSI</li> <li>- TGPS status flag</li> <li>- TGCFN</li> <li>- TGPSI</li> <li>- TGPS status flag</li> <li>- TGCFN</li> <li>- TGPSI</li> <li>- TGPS status flag</li> <li>- TGCFN</li> </ul>	<p>1</p> <p>Activate</p> <p>(Current CFN + (252 – TTI/10msec))mod 256</p> <p>2</p> <p>Activate</p> <p>(Current CFN + (254 – TTI/10msec))mod 256</p> <p>3</p> <p>Activate</p> <p>(Current CFN + (250 – TTI/10msec))mod 256</p>

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable. RXLEV is mapped to a value between 0 and 63. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit. When mapping the RXLEV value to the RSSI bit string, the first/ leftmost bit of the bit string contains the most significant bit.
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to either 0 or 1
- Observed time difference to GSM cell	Check that the IE is not included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 1 if the previous inter-RAT cell id was set to 0 or to 0 if the previous cell id was set to 1.
- Observed time difference to GSM cell	Check that the IE is not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
- Inter-RAT event identity	Check that this is set to 3c
- Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 0.

8.4.1.35.4 Test requirement

After instant T1, since the cell individual offset for GSM cell 1 is +10 dB, event 3c shall be triggered in the UE, i.e the UE shall begin to transmit a MEASUREMENT REPORT to the SS. Note that GSM cell 2 has not triggered event 3c

even though the RF signal strength for GSM cell 2 is the same as for cell 1, because the cell individual offset for GSM cell 2 is -3 dB.

After instant T2, no MEASUREMENT REPORT shall be received from the UE, since GSM cell 1 has already triggered event 3c, and since the RF signal strength has not dropped enough for the leaving condition to be met.

### 8.4.1.36 Measurement Control and Report: Inter-RAT measurement, event 3d

#### 8.4.1.36.1 Definition

#### 8.4.1.36.2 Conformance requirement

When event 3d is configured in the UE within a measurement, the UE shall:

- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
  - 2> when the measurement is initiated or resumed:
    - 3> store in the variable BEST\_CELL\_3D\_EVENT the Inter-RAT cell id of the GSM cell that has the best measured quantity among the GSM cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement
    - 3> send a measurement report with IE set as below:
      - 4> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cell that is stored in the variable BEST\_CELL\_3D\_EVENT;
      - 4> set the IE "measured results" and the IE "additional measured results" according to TS 25.331 subclause 8.4.2, not taking into account the cell individual offset;
    - 2> if equation 1 has been fulfilled for a time period indicated by "time to trigger" for a GSM cell that is different from the one stored in BEST\_CELL\_3D\_EVENT and that matches any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
      - 3> store the Inter-RAT cell id of that GSM cell in the variable BEST\_CELL\_3D\_EVENT;
      - 3> send a measurement report with IEs set as below:
        - 4> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cell is now stored in BEST\_CELL\_3D\_EVENT;
        - 4> set the IE "measured results" and the IE "additional measured results" according to TS 25.331 subclause 8.4.2, not taking into account the cell individual offset;
  - 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
    - 2> when the measurement is initiated or resumed:
      - 3> store in the variable BEST\_CELL\_3D\_EVENT the BCCH ARFCN of the GSM cell that has the best measured quantity among the BCCH ARFCNs considered in that inter-RAT measurement;
      - 3> send a measurement report with IE set as below:
        - 4> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to the BCH ARFCN that is stored in the variable BEST\_CELL\_3D\_EVENT;
        - 4> set the IE "measured results" and the IE "additional measured results" according to TS 25.331 subclause 8.4.2, not taking into account the cell individual offset;

- 2> if equation 1 below has been fulfilled for a time period indicated by "time to trigger" for one of the BCCH ARFCNs considered in that inter-RAT measurement and different from the one stored in BEST\_CELL\_3D\_EVENT:
- 3> store the BCCH ARFCN of that GSM cell in the variable BEST\_CELL\_3D\_EVENT;
- 3> send a measurement report with IEs set as below:
  - 4> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to the BCCH ARFCN that is now stored in the variable BEST\_CELL\_3D\_EVENT;
  - 4> set the IE "measured results" and the IE "additional measured results" according to TS 25.331 subclause 8.4.2, not taking into account the cell individual offset;

Equation 1:

$$M_{New} \geq M_{Best} + H_{3d} / 2$$

The variables in the formula are defined as follows:

$M_{New}$  is the measurement quantity for a GSM cell that is not stored in the variable BEST\_CELL\_3D.

$M_{Best}$  is the measurement quantity for a GSM cell that is stored in the variable BEST\_CELL\_3D.

$H_{3d}$  is the hysteresis parameter for event 3d.

Reference

3GPP TS 25.331 clause 14.3.1.4.

#### 8.4.1.36.3 Test Purpose

1. To confirm that the UE sends MEASUREMENT REPORT message if event 3d is configured, and if the best cell changes in the other system. To confirm that no other UE MEASUREMENT REPORT message is sent by the UE for a cell that has already triggered event 3d as long as the hysteresis condition for triggering once again event 3d has not been fulfilled.

#### 8.4.1.36.4 Method of test

Initial Condition

System simulator: 1 UTRAN FDD cell and 2 GSM cells. The initial configurations of the 4 cells in the SS shall follow the values indicated in the column marked T0. The table is found in "Test procedure".

UE: CELL\_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statements

- Compressed mode required      yes/no

Test procedure

**Table 8.4.1.36.4-1**

Parameter	Unit	Cell 1 (GSM)		Cell 2 (GSM)	
		T0	T1	T0	T1
Test Channel	#	GSM Ch.1		GSM Ch.2	
BCCH ARFCN	#	1		7	
CELL identity	#	0		1	
BSIC	#	BSIC 1		BSIC 2	
RF Signal Level	dBm	-70	-90	-90	-70

The table above illustrate the downlink power to be applied for the two cells at various instants of the test execution. Column marked "T0" denotes the initial conditions, while column marked "T1" indicates the values to be applied subsequently.

The UE is initially in CELL\_DCH, state 6-9 as specified in clause 7.4 of TS 34.108. UTRA cell 1 is the only cell in the active set of the UE. If the UE requires compressed mode (refer ICS/IXIT), the SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters to the UE. Three compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message to the UE, to set up inter-RAT measurements. Event 3d is set up in this message, and if the UE requires compressed mode (refer ICS/IXIT), compressed mode is activated.

At instant T1, the RF signal strength for GSM cell 1 increases while the RF signal strength for GSM cell 2 decreases as described in table 8.4.1.36.4-1.

A MEASUREMENT CONTROL is then sent to the UE that releases the inter-RAT measurement, and deactivates compressed mode. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

## Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1. If the UE does not require compressed mode (refer ICS/IXIT), then goto step 4.
2		←	PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4		←	MEASUREMENT CONTROL	SS configures event 3d in the UE. If the UE requires compressed mode (refer ICS/IXIT), compressed mode is started.
5		→	MEASUREMENT REPORT	The UE sends a MEASUREMENT REPORT to UTRAN indicating which is the best GSM cells just after the initiation of the measurement
6				SS re-adjusts the downlink transmission power settings according to columns "T1" in tables 8.4.1.36.4-1.
7		→	MEASUREMENT REPORT	After about 1 s, the UE sends a MEASUREMENT REPORT to SS triggered by event 3b.
8		←	MEASUREMENT CONTROL	SS releases the inter-RAT measurements, and, if the UE requires compressed mode (refer ICS/IXIT), deactivates compressed mode.
9				If the UE requires compressed mode (refer ICS/IXIT), SS checks that the UE has deactivated compressed mode.
10		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

## Specific Message Content

## PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links <ul style="list-style-type: none"> <li>- DPCH compressed mode info</li> <li>- TGPSI</li> <li>- TGPS Status Flag</li> <li>- TGCFN</li> <li>- Transmission gap pattern sequence</li> </ul> configuration parameters <ul style="list-style-type: none"> <li>- TGMP</li> <li>- TGPRC</li> <li>- TGSN</li> <li>- TGL1</li> <li>- TGL2</li> <li>- TGD</li> <li>- TGPL1</li> <li>- TGPL2</li> <li>- RPP</li> <li>- ITP</li> </ul> CHOICE UL/DL Mode <ul style="list-style-type: none"> <li>- Downlink compressed mode method</li> <li>- Uplink compressed mode method</li> </ul> <ul style="list-style-type: none"> <li>- Downlink frame type</li> <li>- DeltaSIR1</li> <li>- DeltaSIRAfter1</li> <li>- DeltaSIR2</li> <li>- DeltaSIR2After2</li> <li>- N identify abort</li> <li>- T Reconfirm abort</li> <li>- TGPSI</li> <li>- TGPS Status Flag</li> <li>- TGCFN</li> <li>- Transmission gap pattern sequence</li> </ul> configuration parameters <ul style="list-style-type: none"> <li>- TGMP</li> <li>- TGPRC</li> <li>- TGSN</li> <li>- TGL1</li> <li>- TGL2</li> <li>- TGD</li> <li>- TGPL1</li> <li>- TGPL2</li> <li>- RPP</li> <li>- ITP</li> </ul> CHOICE UL/DL Mode <ul style="list-style-type: none"> <li>- Downlink compressed mode method</li> <li>- Uplink compressed mode method</li> </ul> <ul style="list-style-type: none"> <li>- Downlink frame type</li> <li>- DeltaSIR1</li> <li>- DeltaSIRAfter1</li> <li>- DeltaSIR2</li> <li>- DeltaSIR2After2</li> <li>- N identify abort</li> <li>- T Reconfirm abort</li> <li>- TGPSI</li> <li>- TGPS Status Flag</li> <li>- TGCFN</li> <li>- Transmission gap pattern sequence</li> </ul> configuration parameters <ul style="list-style-type: none"> <li>- TGMP</li> </ul>	1 Deactivate Not present  GSM Carrier RSSI Measurement Infinity 4 7 Not present undefined 12 Not present Mode 0 Mode 0 UL&DL or UL-only or DL-only (depends on UE's Measurement capability) depends on UE's Measurement capability) SF/2 SF/2 A 1.0 0.5 Not Present Not Present Not Present Not Present 2 Deactivate Not present  GSM BSIC identification Infinity 4 7 Not present <a href="#">undefined</a> 8 Not present Mode 0 Mode 0 UL&DL or UL-only or DL-only (depends on UE's Measurement capability) SF/2 SF/2 A 1.0 0.5 Not Present Not Present 66 Not Present 3 Deactivate Not present  GSM BSIC re-confirmation

- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	<a href="#">undefined</a>
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	5 s

## MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells
- Remove all inter-RAT cells	(No Data)
New inter-RAT cells (1 to <MaxCellMeas>)	MaxCellMeas=2
- inter-RAT cell id	Not present
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	Not present
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not included
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	required
- inter-RAT reporting quantity	
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
CHOICE report criteria	
- Inter-RAT measurements reporting criteria	
- Parameters required for each event (1 to <maxMeasEvent>)	<MaxMeasEvent>=1

<ul style="list-style-type: none"> <li>- Inter-RAT event identity</li> <li>- Threshold own system</li> <li>- W</li> <li>- Threshold other system</li> <li>- Hysteresis</li> <li>- Time to Trigger</li> <li>- Reporting cell status</li>   <li>- Maximum number of reported cells</li> </ul> <p>Physical channel information elements</p> <ul style="list-style-type: none"> <li>- DPCH compressed mode status info</li>    <li>- TGPS reconfiguration CFN</li> <li>- Transmission gap pattern sequence (1 to &lt;MaxTGPS&gt;)</li> <li>- TGPSI</li> <li>- TGPS status flag</li> <li>- TGCFN</li> <li>- TGPSI</li> <li>- TGPS status flag</li> <li>- TGCFN</li> <li>- TGPSI</li> <li>- TGPS status flag</li> <li>- TGCFN</li> </ul>	<p>3d</p> <p>Not present</p> <p>Not present</p> <p>Not present</p> <p>5</p> <p>200 ms</p> <p>Report cells within active set or within virtual active set or of the other RAT</p> <p>2</p> <p>If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present. (Current CFN + (250 – TTI/10msec))mod 256 &lt;MaxTGPS&gt;=3</p> <p>1</p> <p>Activate (Current CFN + (252 – TTI/10msec))mod 256</p> <p>2</p> <p>Activate (Current CFN + (254 – TTI/10msec))mod 256</p> <p>3</p> <p>Activate (Current CFN + (250 – TTI/10msec))mod 256</p>
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MEASUREMENT REPORT (Step 5)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable. RXLEV is mapped to a value between 0 and 63. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit. When mapping the RXLEV value to the RSSI bit string, the first/ leftmost bit of the bit string contains the most significant bit.
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to 0
- Observed time difference to GSM cell	Check that the IE is not included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that it is set to 1
- Observed time difference to GSM cell	Check that the IE is not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
- Inter-RAT event identity	Check that this is set to 3d
- Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 0.



MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
	Check that measurement result is reasonable. RXLEV is mapped to a value between 0 and 63. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit. When mapping the RXLEV value to the RSSI bit string, the first/ leftmost bit of the bit string contains the most significant bit.
- GSM carrier RSSI	Check that measurement result is reasonable
	Verified BSIC
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to 1
- Observed time difference to GSM cell	Check that the IE is not included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that it is set to 0.
- Observed time difference to GSM cell	Check that the IE is not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
	Check that this is set to 3d
- Inter-RAT event identity	Check that <maxCellMeas> is set to 1
- Cells to report (1 to <maxCellMeas>)	Check that this is set to verified BSIC
- CHOICE BSIC	Check that this is set to 1.
- Inter-RAT cell id	

MEASUREMENT CONTROL (Step 8)

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Release
Physical channel information elements	
- DPCH compressed mode status info	If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present.
	(Current CFN + (256 – TTI/10msec))mod 256
- TGPS reconfiguration CFN	<MaxTGPS>=3
- Transmission gap pattern sequence (1 to <MaxTGPS>)	
- TGPSI	1
- TGPS status flag	Deactivate
- TGCFN	Not present
- TGPSI	2
- TGPS status flag	Deactivate
- TGCFN	Not present
- TGPSI	3
- TGPS status flag	Deactivate
- TGCFN	Not present

8.4.1.36.5 Test requirement

Shortly after the UE has received the first MEASUREMENT CONTROL message it shall transmit a MEASUREMENT REPORT to the SS.

After instant T1, the UE shall begin to transmit a MEASUREMENT REPORT triggered by event 3d to the SS.

After receiving the second MEASUREMENT CONTROL message, the UE shall then stop running compressed mode.

<End of modified section>

<Start of modified section>

#### 8.4.1.40 Measurement Control and Report: Inter-RAT measurement, event 3C, in CELL\_DCH state using sparse compressed mode pattern

##### 8.4.1.40.1 Definition

##### 8.4.1.40.2 Conformance requirement

1. Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in 3GPP TS 25.331 clause 8.6 unless otherwise specified below.

The UE shall:

- read the IE "Measurement command";
- if the IE "measurement command" has the value "setup":
  - store this measurement in the variable MEASUREMENT\_IDENTITY according to the IE "measurement identity", possibly overwriting the measurement previously stored with that identity;
  - for measurement types "inter-RAT measurement" or "inter-frequency measurement":
    - if, according to its measurement capabilities, the UE requires compressed mode to perform the measurements and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; or
    - if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:
      - begin measurements according to the stored control information for this measurement identity;
- 2. Event 3c: The estimated quality of other system is above a certain threshold. When this event is ordered by UTRAN in a measurement control message the UE shall send a report when the estimated quality of the other system is above the value of the IE "Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system.

##### Reference

3GPP TS 25.331 clause 8.4.1.3, 14.3.1.3.

##### 8.4.1.40.3 Test Purpose

This test case is only applicable to UEs supporting both FDD and GSM, and which require compressed mode to perform the GSM related measurements.

1. To verify that the UE performs Inter-RAT measurement using a sparse compressed mode pattern as specified in the MEASUREMENT CONTROL message.
2. To verify that the UE send MEASUREMENT REPORT message when event 3C is triggered, and if the quality of the other system becomes better than the given threshold for event 3c.
3. To confirm that no other UE MEASUREMENT REPORT message is sent by the UE for a cell that has already triggered event 3c as long as the hysteresis condition for triggering once again event 3c has not been fulfilled.

## 8.4.1.40.4 Method of test

Table 8.4.1.40.4-1 Sparse compressed mode pattern for Inter-RAT measurement

TGMP	TGCFN	TGPRC	TGSN	TGL1	TGL2	TGD	TGPL1	TGPL2	Comment
GSM carrier RSSI measurement	Note 1	Inf.	4	7	Not sent	<a href="#">undefined</a>	16	16	Set-up to monitor 16 GSM neighbours every second measurement period, i.e. every second 480ms period.
GSM Initial BSIC identification	Note 1	Inf.	8	14	Not sent	<a href="#">undefined</a>	24	24	Equal to Pattern 6 in TS 25.133 table 8.7.
GSM BSIC re-confirmation	Note 1	Inf.	8	14	Not sent	<a href="#">undefined</a>	24	24	Equal to Pattern 12 in TS 25.133 table 8.8.

NOTE 1: TGCFN can be found in the MEASUREMENT CONTROL message.

## Initial Condition

System simulator: 1 UTRAN FDD cell and 2 GSM cells. The initial configurations of the cells in the SS shall follow the values indicated in the column marked T0. The table is found in "Test procedure".

UE: ["CS-DCCH + DTCH\\_DCH"CELL\\_DCH](#) state, state 6-9 as specified in clause 7.4 of TS 34.108.

## Related ICS/IXIT statements

~~Compressed mode required~~ yes/no

## Test procedure

Table 8.4.1.40.4-2 Inter-RAT cell specific data

Parameter	Unit	Cell 1 (GSM)				Cell 2 (GSM)			
		T0	T1	T2	T3	T0	T1	T2	T3
Test Channel	#	GSM Ch.1				GSM Ch.2			
BCCH ARFCN	#	1				7			
CELL identity	#	0				1			
BSIC	#	BSIC 1				BSIC 2			
RF Signal Level	dBm	-90	-75	-80	-75	-75	-75	-75	-75

GSM cell 3 to 12 as indicated in the a MEASUREMENT CONTROL message shall not be active in the test, i.e. no BCCH carrier shall be transmitted for GSM cell 3 to 12 in this test.

The table above illustrate the downlink power to be applied for the two cells at various instants of the test execution. Column marked "T0" denotes the initial conditions, while column marked "T1", "T2" and "T3" indicate the values to be applied subsequently.

The UE is initially in ["CS-DCCH + DTCH\\_DCH"CELL\\_DCH](#) state 6-9 as specified in clause 7.4 of TS 34.108. UTRA cell 1 is the only cell in the active set of the UE. The SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters to the UE. Three compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message to the UE, to set up inter-RAT measurements on 16 GSM cells. Event 3c is set up in this message, and ~~if the UE requires compressed mode (refer ICS/IXIT)~~, compressed mode is activated.

At instant T1, the RF signal strength for GSM cell 1 increases as described in table 8.4.1.40.4-2, since the cell individual offset for GSM cell 1 is 10 dB, event 3c shall be triggered in the UE. A MEASUREMENT REPORT shall be

sent to the SS. Note that GSM cell 2 has not triggered event 3c even though the RF signal strength for GSM cell 2 is the same as for cell 1, because the cell individual offset for GSM cell 2 is -3 dB.

At instant T2, the RF signal strength for GSM cell 1 drops as described in table 8.4.1.40.4-2, and at instant T3, it increases again to its previous level. No MEASUREMENT REPORT shall be received from the UE, since GSM cell 1 has already triggered event 3c, and since the RF signal strength has not dropped enough for the leaving condition to be met. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

#### Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1.
2		←	PHYSICAL CHANNEL RECONFIGURATION	If the UE requires compressed mode (refer ICS/IXIT), compressed mode pattern sequence parameters are loaded to UE.
3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4		←	MEASUREMENT CONTROL	SS configures event 3c in the UE. If the UE requires compressed mode (refer ICS/IXIT), compressed mode is started.
5				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
6				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.40.4-2.
7		→	MEASUREMENT REPORT	After about 1.6 s, the UE sends a MEASUREMENT REPORT to SS triggered by event 3c.
8				SS re-adjusts the downlink transmission power settings according to columns "T2" in table 8.4.1.40.4-2.
9				SS re-adjusts the downlink transmission power settings according to columns "T3" in table 8.4.1.40.4-2.
10				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
11		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

## Specific Message Content

## PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links <ul style="list-style-type: none"> <li>- DPCH compressed mode info</li> <li>- TGPSI</li> <li>- TGPS Status Flag</li> <li>- TGCFN</li> <li>- Transmission gap pattern sequence configuration parameters</li> <li>- TGMP</li> <li>- TGPRC</li> <li>- TGSN</li> <li>- TGL1</li> <li>- TGL2</li> <li>- TGD</li> <li>- TGPL1</li> <li>- TGPL2</li> <li>- RPP</li> <li>- ITP</li> <li>CHOICE UL/DL Mode               <ul style="list-style-type: none"> <li>- Downlink compressed mode method</li> <li>- Uplink compressed mode method</li> </ul> </li> <li>- Downlink frame type</li> <li>- DeltaSIR1</li> <li>- DeltaSIRAfter1</li> <li>- DeltaSIR2</li> <li>- DeltaSIR2After2</li> <li>- N identify abort</li> <li>- T Reconfirm abort</li> <li>- TGPSI</li> <li>- TGPS Status Flag</li> <li>- TGCFN</li> <li>- Transmission gap pattern sequence configuration parameters</li> <li>- TGMP</li> <li>- TGPRC</li> <li>- TGSN</li> <li>- TGL1</li> <li>- TGL2</li> <li>- TGD</li> <li>- TGPL1</li> <li>- TGPL2</li> <li>- RPP</li> <li>- ITP</li> <li>CHOICE UL/DL Mode               <ul style="list-style-type: none"> <li>- Downlink compressed mode method</li> <li>- Uplink compressed mode method</li> </ul> </li> <li>- Downlink frame type</li> <li>- DeltaSIR1</li> <li>- DeltaSIRAfter1</li> <li>- DeltaSIR2</li> <li>- DeltaSIR2After2</li> <li>- N identify abort</li> <li>- T Reconfirm abort</li> <li>- TGPSI</li> <li>- TGPS Status Flag</li> <li>- TGCFN</li> <li>- Transmission gap pattern sequence configuration parameters</li> <li>- TGMP</li> <li>- TGPRC</li> </ul>	1 Deactivate Not present  GSM Carrier RSSI Measurement Infinity 4 7 Not present undefined 16 Not present Mode 0 Mode 0 UL&DL or UL-only or DL-only (depends on UE's Measurement capability) SF/2 SF/2 A 1.0 0.5 Not Present Not Present Not Present Not Present 2 Deactivate Not present  GSM BSIC identification Infinity 8 14 Not present undefined 24 Not present Mode 0 Mode 0 UL&DL or UL-only or DL-only (depends on UE's Measurement capability) SF/2 SF/2 A 1.0 0.5 Not Present Not Present 66 Not Present 3 Deactivate Not present  GSM BSIC re-confirmation Infinity

- TGSN	8
- TGL1	14
- TGL2	Not present
- TGD	<a href="#">undefined</a> <sup>0</sup>
- TGPL1	24
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	4.8 s

## MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells
- Remove all inter-RAT cells	(No Data)
New inter-RAT cells (1 to <MaxCellMeas>)	MaxCellMeas=16
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	10
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	-3
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	3
- inter-RAT cell id	2
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC3
- Band indicator	DCS 1800 band used
- BCCH ARFCN	5
- inter-RAT cell id	3
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC4
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- inter-RAT cell id	4
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC5
- Band indicator	DCS 1800 band used
- BCCH ARFCN	9
- inter-RAT cell id	5
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC6
- Band indicator	DCS 1800 band used
- BCCH ARFCN	11
- inter-RAT cell id	6
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC7
- Band indicator	DCS 1800 band used
- BCCH ARFCN	13
- inter-RAT cell id	7
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC8
- Band indicator	DCS 1800 band used

- BCCH ARFCN	15
- inter-RAT cell id	8
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC9
- Band indicator	DCS 1800 band used
- BCCH ARFCN	17
- inter-RAT cell id	9
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC10
- Band indicator	DCS 1800 band used
- BCCH ARFCN	19
- inter-RAT cell id	10
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC11
- Band indicator	DCS 1800 band used
- BCCH ARFCN	21
- inter-RAT cell id	11
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC12
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- inter-RAT cell id	12
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC13
- Band indicator	DCS 1800 band used
- BCCH ARFCN	9
- inter-RAT cell id	13
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC14
- Band indicator	DCS 1800 band used
- BCCH ARFCN	11
- inter-RAT cell id	14
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC15
- Band indicator	DCS 1800 band used
- BCCH ARFCN	13
- inter-RAT cell id	15
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC16
- Band indicator	DCS 1800 band used
- BCCH ARFCN	15
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not included
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	required
- inter-RAT reporting quantity	
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE



<ul style="list-style-type: none"> <li>- GSM carrier RSSI reporting indicator</li> <li>CHOICE report criteria</li> <li>- Inter-RAT measurements reporting criteria             <ul style="list-style-type: none"> <li>- Parameters required for each event (1 to &lt;maxMeasEvent&gt;)                 <ul style="list-style-type: none"> <li>- Inter-RAT event identity</li> <li>- Threshold own system</li> <li>- W</li> <li>- Threshold other system</li> <li>- Hysteresis</li> <li>- Time to Trigger</li> <li>- Reporting cell status</li> </ul> </li> <li>- Maximum number of reported cells</li> </ul> </li> <li>Physical channel information elements             <ul style="list-style-type: none"> <li>- DPCH compressed mode status info</li> </ul> </li> <li>- TGPS reconfiguration CFN</li> <li>- Transmission gap pattern sequence (1 to &lt;MaxTGPS&gt;)             <ul style="list-style-type: none"> <li>- TGPSI</li> <li>- TGPS status flag</li> <li>- TGCFN</li> <li>- TGPSI</li> <li>- TGPS status flag</li> <li>- TGCFN</li> <li>- TGPSI</li> <li>- TGPS status flag</li> <li>- TGCFN</li> </ul> </li> </ul>	<p>TRUE</p> <p>&lt;MaxMeasEvent&gt;=1</p> <p>3c</p> <p>Not included</p> <p>Not included</p> <p>-74</p> <p>5</p> <p>100 ms</p> <p>Report cells within active set or within virtual active set or of the other RAT</p> <p>2</p> <p style="color: red;">If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present.</p> <p>(Current CFN + (250 – TTI/10msec)) mod 256</p> <p>&lt;MaxTGPS&gt;=33f35s</p> <p>1</p> <p>Activate</p> <p>(Current CFN + (256 – 11 – TTI/10msec)) mod 256</p> <p>2</p> <p>Activate</p> <p>(Current CFN + (256 – 7 – TTI/10msec)) mod 256</p> <p>3</p> <p>Activate</p> <p>(Current CFN + (256 – TTI/10msec)) mod 256</p>
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MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable. RXLEV is mapped to a value between 0 and 63. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit. When mapping the RXLEV value to the RSSI bit string, the first/ leftmost bit of the bit string contains the most significant bit.
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to either 0 or 1
- Observed time difference to GSM cell	Check that the IE is not included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 1 if the previous inter-RAT cell id was set to 0 or to 0 if the previous cell id was set to 1.
- Observed time difference to GSM cell	Check that the IE is not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
- Inter-RAT event identity	Check that this is set to 3c
- Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 0.

#### 8.4.1.40.5 Test Requirement

After instant T1, since the cell individual offset for GSM cell 1 is +10 dB, event 3c shall be triggered in the UE, i.e the UE shall begin to transmit a MEASUREMENT REPORT to the SS. Note that GSM cell 2 has not triggered event 3c even though the RF signal strength for GSM cell 2 is the same as for cell 1, because the cell individual offset for GSM cell 2 is -3 dB.

After instant T2, no MEASUREMENT REPORT shall be received from the UE, since GSM cell 1 has already triggered event 3c, and since the RF signal strength has not dropped enough for the leaving condition to be met.

<End of modified section>

<Start of modified section>

### 8.4.1.42 Measurement Control and Report: Change of Compressed Mode Method

#### 8.4.1.42.1 Definition

#### 8.4.1.42.2 Conformance requirement

If variable INVALID\_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS\_IDENTITY):
  - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
    - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.
    - 3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS\_IDENTITY to "inactive".
  - 2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
    - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

- 1> update each pattern sequence to the variable TGPS\_IDENTITY according to the IE "TGPSI";
- 1> update into the variable TGPS\_IDENTITY the configuration information defined by IE group "transmission gap pattern sequence configuration parameters";
- 1> after the new configuration has been taken into use:
  - 2> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in the variable TGPS\_IDENTITY is set to "activate" at the time indicated by IE "TGCFN"; and
  - 2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
  - 2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":
    - 3> start the concerned pattern sequence immediately at that CFN.
- 1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified in subclause 8.2.11.2.

....

Uplink and downlink compressed mode methods are described in TS 25.212. For UL "higher layer scheduling" compressed mode method and transport format combination selection, see TS 25.321.

#### Reference

3GPP TS 25.331 clause 8.6.6.15.

#### 8.4.1.42.3 Test purpose

To confirm that the UE supports change of compressed mode method included in a RADIO BEARER SETUP message.

To confirm that the UE supports change of compressed mode method included in a RADIO BEARER RELEASE message.

#### 8.4.1.42.4 Method of test

##### Initial Condition

System Simulator: 3 cells – Cell 1 on frequency  $f_1$ , cell 4 on frequency  $f_2$  and cell 5 on frequency  $f_3$ .

UE: "PS-DCCH\_DCH" (state 6-7) as specified in clause 7.4 of TS 34.108. Ciphering shall be activated.

This test case applies only for UEs requiring compressed mode to perform inter- frequency measurements and supporting both PS and CS domains.

##### Test Procedure

Table 8.4.1.42-1 illustrates the downlink power to be applied for the 3 cells, as well as the frequency and scrambling code for each cell.

**Table 8.4.1.42-1a**

Parameter	Unit	Cell 1					
		Frequency	$f_1$				
Scrambling code		Scrambling code 1					
		T0	T1	T2	T3	T4	T5
CPICH Ec	dBm/3.8 4 MHz	-60	-70	-70	-60	-70	-70

**Table 8.4.1.42-1b**

Parameter	Unit	Cell 4						Cell 5					
		Frequency		$f_2$						$f_3$			
Scrambling code		Scrambling code 3						Scrambling code 2					
		T0	T1	T2	T3	T4	T5	T0	T1	T2	T3	T4	T5
CPICH Ec	dBm/3. 84 MHz	-95	-60	-60	-60	-60	-60	-95	-95	-60	-95	-95	-60

The UE is initially in CELL\_DCH, and has only cell 1 in its active set.

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to download compressed mode parameters in the UE but without activating compressed mode. The UE shall answer with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

The SS then sets up inter-frequency measurements (event 2b), by sending a MEASUREMENT CONTROL message to the UE.

At instant T1, the downlink power is changed according to what is shown in table 8.4.1.42-1. Frequency  $f_2$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

The SS establishes a CS domain RAB and changes the compressed mode method to (from HLS to SF/2), by sending a RADIO BEARER SETUP message on DCCH using AM-RLC. The UE shall answer with a RADIO BEARER SETUP COMPLETE message.

At instant T2, the downlink power is changed according to what is shown in table 8.4.1.42-1. Frequency  $f_3$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

At instant T3, the downlink power is changed according to what is shown in table 8.4.1.42-1. The increased quality of the used frequency should result in clearing of the concerning TRIGGERED\_2B\_EVENT.

The SS establishes PS domain RAB and changes compressed mode method (from SF/2 to HLS) by sending a RADIO BEARER SETUP message on DCCH using AM-RLC. The UE shall answer with a RADIO BEARER SETUP COMPLETE message.

At instant T4, the downlink power is changed according to what is shown in table 8.4.1.42-1. Frequency  $f_2$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

Next, the SS releases the PS domain RAB and changes compressed mode method (from HLS to SF/2) by sending a RADIO BEARER RELEASE message on DCCH using AM-RLC. The UE shall answer with a RADIO BEARER RELEASE COMPLETE message.

At instant T5, the downlink power is changed according to what is shown in table 8.4.1.42-1. Frequency  $f_3$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

#### Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	SS downloads compressed mode parameters (using HLS method) without activating compressed mode
2		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE acknowledges the downloading of compressed mode parameters
3		←	MEASUREMENT CONTROL	The SS configures inter-frequency measurements in the UE and activates compressed mode
4				The SS changes the power of the cells according to column T1 in table 8.4.1.42-1.
5		→	MEASUREMENT REPORT	Frequency $f_2$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.
6		←	RADIO BEARER SETUP	SS establishes CS domain RAB (speech) and changes to SF/2 compressed mode method
7		→	RADIO BEARER SETUP COMPLETE	The UE acknowledges the establishment of the RAB and the compressed mode method change.
8				The SS changes the power of the cells according to column T2 in table 8.4.1.42-1.

9	→	MEASUREMENT REPORT	Frequency $f_3$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.
10			The SS changes the power of the cells according to T3 in table 8.4.1.42-1 (so the UE can trigger event 2b again for both frequencies if suitable conditions arise)
11	←	RADIO BEARER SETUP	SS establishes PS domain RAB and changes compressed mode method to HLS.
12	→	RADIO BEARER SETUP COMPLETE	The UE acknowledges the establishment of the RAB and the compressed mode method change.
13			The SS changes the power of the cells according to column T4 in table 8.4.1.42-1.
14	→	MEASUREMENT REPORT	Frequency $f_2$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.
15	←	RADIO BEARER RELEASE	SS releases the PS domain RAB and changes compressed mode method to SF/2.
16	→	RADIO BEARER RELEASE COMPLETE	The UE acknowledges the release of the RAB and the compressed mode method change.
17			The SS changes the power of the cells according to column T5 in table 8.4.1.42-1.
18	→	MEASUREMENT REPORT	Frequency $f_3$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.

### Specific Message Content

All messages shall use the same content as defined in [9] TS 34.108 clause 9, with the following exceptions:

### PHYSICAL CHANNEL RECONFIGURATION MESSAGE (Step 1)

Information Element	Value/Remark
Activation time	Not Present
New U-RNTI	Not Present
New C-RNTI	Not Present
New DSCH-RNTI	Not Present
RRC State indicator	CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present

Downlink counter synchronisation info	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
CHOICE <i>channel requirement</i>	Not Present
CHOICE <i>mode</i>	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	Not Present
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not Present
- TGD	<a href="#">undefined</a> <sup>⓪</sup>
- TGPL1	3
- TGPL2	Not Present
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL, UL only or DL only (depending on the UE capability)
- Downlink compressed mode method	HLS(or not sent, depending on the UE capability)
- Uplink compressed mode method	HLS(or not sent, depending on the UE capability)
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TX Diversity mode	Not Present
- SSDT information	Not Present
- Default DPCH Offset Value	Not Present
Downlink information for each radio link	Not Present

## MEASUREMENT CONTROL (Step 3)

Information Element	Value/Remark
Measurement Identity	2
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	2 inter-frequency cells
- Inter-frequency cell id	4
- Frequency info	
- UARFCN uplink (Nu)	UARFCN for the uplink corresponding to $f_2$
- UARFCN downlink (Nd)	UARFCN for the downlink corresponding to $f_2$
- Cell info	
- Cell individual offset	0 dB

- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Scrambling code 3
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Inter-frequency cell id	5
- Frequency info	
- UARFCN uplink (Nu)	UARFCN for the uplink corresponding to $f_3$
- UARFCN downlink (Nd)	UARFCN for the downlink corresponding to $f_3$
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	Not present
- Primary Scrambling Code	Scrambling code 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	Not present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not present
- Measurement validity	
- UE State	CELL_DCH
- Inter-frequency set update	
- UE autonomous update	On with no reporting
- Non autonomous update mode	Not present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2b
- Threshold used frequency	-70 dBm
- W used frequency	0.0
- Hysteresis	1.0 dB
- Time to trigger	100 ms
- Reporting cell status	Report cells within monitored and/or virtual active set on non-used frequency
- Maximum number of reported cells per reported non-used frequency	2
- Parameters required for each non-used frequency	
- Threshold non used frequency	-65 dBm
- W non-used frequency	0
DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS Status Flag	Activate
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256

Information Element	Value/Remark
Message Type Integrity check info <ul style="list-style-type: none"> <li>- Message authentication code</li> <li>- RRC Message sequence number</li> </ul> Measurement identity Measured Results <ul style="list-style-type: none"> <li>- Inter-frequency measured results list</li> <li>- Frequency info</li> <li>-CHOICE mode               <ul style="list-style-type: none"> <li>- UARFCN uplink</li> <li>- UARFCN downlink</li> </ul> </li> <li>- UTRA carrier RSSI</li> <li>- Inter-frequency cell measurement results</li> <li>- Cell measured results               <ul style="list-style-type: none"> <li>- Cell Identity</li> <li>- SFN-SFN observed time difference</li> <li>- Cell synchronisation information</li> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> <li>- CPICH Ec/N0</li> <li>- CPICH RSCP</li> <li>- Pathloss</li> </ul> </li> </ul> Measured results on RACH Additional measured results Event results <ul style="list-style-type: none"> <li>- Inter-frequency measurement event results               <ul style="list-style-type: none"> <li>- Inter-frequency event identity</li> <li>- Inter-frequency cells                   <ul style="list-style-type: none"> <li>- Frequency info</li> <li>-CHOICE mode                       <ul style="list-style-type: none"> <li>- UARFCN uplink</li> <li>- UARFCN downlink</li> </ul> </li> </ul> </li> <li>- Non freq related measurement event results                   <ul style="list-style-type: none"> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> </ul> </li> </ul> </li> </ul>	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. 2  FDD Check that the value of this IE is set to UARFCN for the uplink corresponding to $f_2$ (Could be absent in case the duplex distance is the default duplex distance) Check that the value of this IE is set to UARFCN for the downlink corresponding to $f_2$ Check that this IE is absent Check that the value of this IE is set to 1 cell reported  Check that this IE is absent Check that this IE is absent Check that this IE is absent  Check that the value of this IE is set to Scrambling code 3 Check that this IE is absent Check that this IE is present Check that this IE is absent Check that this IE is absent Check that this IE is absent  2b  FDD Check that the value of this IE is set to UARFCN for the uplink corresponding to $f_2$ (Could be absent in case the duplex distance is the default duplex distance) Check that the value of this IE is set to UARFCN for the downlink corresponding to $f_2$  Check that the value of this IE is set to Scrambling code 3

### RADIO BEARER SETUP (Step 6)

Use the same message sub-type found in TS 34.108 clause 9, which is entitled "Speech to CELL\_DCH from CELL\_DCH in CS", with the following modifications:

Information Element	Value/Remark
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<ul style="list-style-type: none"> <li>- DPCH compressed mode info</li> <li>- TGPSI</li> <li>- TGPS Status Flag</li> <li>- TGCFN</li> <li>- Transmission gap pattern sequence configuration parameters</li> <li>- TGMP</li> <li>- TGPRC</li> <li>- TGSN</li> <li>- TGL1</li> <li>- TGL2</li> <li>- TGD</li> <li>- TGPL1</li> <li>- TGPL2</li> <li>- RPP</li> <li>- ITP</li> <li>- CHOICE UL/DL Mode</li>   <li>- Downlink compressed mode method</li> <li>- Uplink compressed mode method</li> <li>- Downlink frame type</li> <li>- DeltaSIR1</li> <li>- DeltaSIRAfter1</li> <li>- DeltaSIR2</li> <li>- DeltaSIRAfter2</li> <li>- N identify abort</li> <li>- T Reconfirm abort</li> </ul>	<p>1 Activate (Current CFN + (256 – TTI/10msec))mod 256</p> <p>FDD Measurement Infinity 4 7 Not Present <a href="#">undefined</a> 3 Not Present Mode 0 Mode 0 UL and DL, UL only or DL only (depending on the UE capability) SF/2(or not sent, depending on the UE capability) SF/2(or not sent, depending on the UE capability) B 2.0 1.0 Not Present Not Present Not Present Not Present</p>
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MEASUREMENT REPORT (Step 9,18)

Information Element	Value/Remark
Message Type Integrity check info <ul style="list-style-type: none"> <li>- Message authentication code</li>   <li>- RRC Message sequence number</li> </ul> Measurement identity Measured Results <ul style="list-style-type: none"> <li>- Inter-frequency measured results list</li> <li>- Frequency info</li> <li>-CHOICE mode</li> <li>- UARFCN uplink</li>   <li>- UARFCN downlink</li>   <li>- UTRA carrier RSSI</li> <li>- Inter-frequency cell measurement results</li> <li>- Cell measured results</li> <li>- Cell Identity</li> <li>- SFN-SFN observed time difference</li> <li>- Cell synchronisation information</li> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li>   <li>- CPICH Ec/N0</li> <li>- CPICH RSCP</li> <li>- Pathloss</li> <li>- Frequency info</li> <li>-CHOICE mode</li> <li>- UARFCN uplink</li>   <li>- UARFCN downlink</li> </ul>	<p>This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.</p> <p>This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.</p> <p>2</p> <p>FDD Check that the value of this IE is set to UARFCN for the uplink corresponding to <math>f_2</math> or <math>f_3</math>(Could be absent in case the duplex distance is the default duplex distance)</p> <p>Check that the value of this IE is set to UARFCN for the downlink corresponding to <math>f_2</math> or <math>f_3</math></p> <p>Check that this IE is absent</p> <p>Check that the value of this IE is set to 1 cell reported</p> <p>Check that this IE is absent</p> <p>Check that this IE is absent</p> <p>Check that this IE is absent</p> <p>Check that the value of this IE is set to Scrambling code 3 (on <math>f_2</math>) or Scrambling code 2 (on <math>f_3</math>)</p> <p>Check that this IE is absent</p> <p>Check that this IE is present</p> <p>Check that this IE is absent</p> <p>FDD Check that the value of this IE is set to UARFCN for the uplink corresponding to <math>f_2</math> or <math>f_3</math>(Could be absent in case the duplex distance is the default duplex distance)</p> <p>Check that the value of this IE is set to UARFCN for the</p>

<ul style="list-style-type: none"> <li>- UTRA carrier RSSI</li> <li>- Inter-frequency cell measurement results</li> <li>- Cell measured results             <ul style="list-style-type: none"> <li>- Cell Identity</li> <li>- SFN-SFN observed time difference</li> <li>- Cell synchronisation information</li> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> </ul> </li> <li>- CPICH Ec/N0</li> <li>- CPICH RSCP</li> <li>- Pathloss</li> </ul> <p>Measured results on RACH Additional measured results Event results</p> <ul style="list-style-type: none"> <li>- Inter-frequency measurement event results             <ul style="list-style-type: none"> <li>- Inter-frequency event identity</li> <li>- Inter-frequency cells                 <ul style="list-style-type: none"> <li>- Frequency info                     <ul style="list-style-type: none"> <li>-CHOICE mode                             <ul style="list-style-type: none"> <li>- UARFCN uplink</li> </ul> </li> </ul> </li> <li>- UARFCN downlink</li> </ul> </li> </ul> </li> <li>- Non freq related measurement event results             <ul style="list-style-type: none"> <li>- Primary CPICH info                 <ul style="list-style-type: none"> <li>- Primary scrambling code</li> </ul> </li> </ul> </li> <li>- Frequency info             <ul style="list-style-type: none"> <li>-CHOICE mode                 <ul style="list-style-type: none"> <li>- UARFCN uplink</li> </ul> </li> <li>- UARFCN downlink</li> </ul> </li> <li>- Non freq related measurement event results             <ul style="list-style-type: none"> <li>- Primary CPICH info                 <ul style="list-style-type: none"> <li>- Primary scrambling code</li> </ul> </li> </ul> </li> </ul>	<p>downlink corresponding to <math>f_2</math> or <math>f_3</math> Check that this IE is absent Check that the value of this IE is set to 1 cell reported</p> <p>Check that this IE is absent Check that this IE is absent Check that this IE is absent</p> <p>Check that the value of this IE is set to Scrambling code 3 (on <math>f_2</math>) or Scrambling code 2 (on <math>f_3</math>) Check that this IE is absent Check that this IE is present Check that this IE is absent Check that this IE is absent Check that this IE is absent</p> <p>2b</p> <p>FDD Check that the value of this IE is set to UARFCN for the uplink corresponding to <math>f_2</math> or <math>f_3</math>(Could be absent in case the duplex distance is the default duplex distance) Check that the value of this IE is set to UARFCN for the downlink corresponding to <math>f_2</math> or <math>f_3</math></p> <p>Check that the value of this IE is set to Scrambling code 3 (on <math>f_2</math>) or Scrambling code 2 (on <math>f_3</math>)</p> <p>FDD Check that the value of this IE is set to UARFCN for the uplink corresponding to <math>f_2</math> or <math>f_3</math>(Could be absent in case the duplex distance is the default duplex distance) Check that the value of this IE is set to UARFCN for the downlink corresponding to <math>f_2</math> or <math>f_3</math></p> <p>Check that the value of this IE is set to Scrambling code 3 (on <math>f_2</math>) or Scrambling code 2 (on <math>f_3</math>)</p>
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RADIO BEARER SETUP (Step 6)

Use the same message sub-type found in TS 34.108 clause 9, which is entitled "Packet to CELL\_DCH from CELL\_DCH in PS", with the following modifications:

Information Element	Value/Remark
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<ul style="list-style-type: none"> <li>- DPCH compressed mode info</li> <li>- TGPSI</li> <li>- TGPS Status Flag</li> <li>- TGCFN</li> <li>- Transmission gap pattern sequence configuration parameters</li> <li>- TGMP</li> <li>- TGPRC</li> <li>- TGSN</li> <li>- TGL1</li> <li>- TGL2</li> <li>- TGD</li> <li>- TGPL1</li> <li>- TGPL2</li> <li>- RPP</li> <li>- ITP</li> <li>- CHOICE UL/DL Mode</li>   <li>- Downlink compressed mode method</li> <li>- Uplink compressed mode method</li> <li>- Downlink frame type</li> <li>- DeltaSIR1</li> <li>- DeltaSIRAfter1</li> <li>- DeltaSIR2</li> <li>- DeltaSIRAfter2</li> <li>- N identify abort</li> <li>- T Reconfirm abort</li> </ul>	<ul style="list-style-type: none"> <li>1</li> <li>Activate</li> <li>(Current CFN + (256 – TTI/10msec))mod 256</li>   <li>FDD Measurement</li> <li>Infinity</li> <li>4</li> <li>7</li> <li>Not Present</li> <li><a href="#">undefined</a></li> <li>3</li> <li>Not Present</li> <li>Mode 0</li> <li>Mode 0</li> <li>UL and DL, UL only or DL only (depending on the UE capability)</li> <li>HLS(or not sent, depending on the UE capability)</li> <li>HLS(or not sent, depending on the UE capability)</li> <li>B</li> <li>2.0</li> <li>1.0</li> <li>Not Present</li> <li>Not Present</li> <li>Not Present</li> <li>Not Present</li> </ul>
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#### RADIO BEARER RELEASE (Step 15)

Use the same message sub-type found in TS 34.108 clause 9, which is entitled "Packet to CELL\_DCH from CELL\_DCH in PS", with the following modifications:

Information Element	Value/Remark
<ul style="list-style-type: none"> <li>- DPCH compressed mode info</li> <li>- TGPSI</li> <li>- TGPS Status Flag</li> <li>- TGCFN</li> <li>- Transmission gap pattern sequence configuration parameters</li> <li>- TGMP</li> <li>- TGPRC</li> <li>- TGSN</li> <li>- TGL1</li> <li>- TGL2</li> <li>- TGD</li> <li>- TGPL1</li> <li>- TGPL2</li> <li>- RPP</li> <li>- ITP</li> <li>- CHOICE UL/DL Mode</li>   <li>- Downlink compressed mode method</li> <li>- Uplink compressed mode method</li> <li>- Downlink frame type</li> <li>- DeltaSIR1</li> <li>- DeltaSIRAfter1</li> <li>- DeltaSIR2</li> <li>- DeltaSIRAfter2</li> <li>- N identify abort</li> <li>- T Reconfirm abort</li> </ul>	<ul style="list-style-type: none"> <li>1</li> <li>Activate</li> <li>(Current CFN + (256 – TTI/10msec))mod 256</li>   <li>FDD Measurement</li> <li>Infinity</li> <li>4</li> <li>7</li> <li>Not Present</li> <li><a href="#">undefined</a></li> <li>3</li> <li>Not Present</li> <li>Mode 0</li> <li>Mode 0</li> <li>UL and DL, UL only or DL only (depending on the UE capability)</li> <li>SF/2(or not sent, depending on the UE capability)</li> <li>SF/2(or not sent, depending on the UE capability)</li> <li>B</li> <li>2.0</li> <li>1.0</li> <li>Not Present</li> <li>Not Present</li> <li>Not Present</li> <li>Not Present</li> </ul>

#### 8.4.1.42.5 Test Requirement

After step 1, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS to acknowledge the downloading of compressed mode parameters that were included in the PHYSICAL CHANNEL RECONFIGURATION message of step 1.

After step 4, the UE shall transmit a MEASUREMENT REPORT message triggered by frequency  $f_2$ . That message shall only include cell 4 within the IE event results.

After step 6, the UE shall send a RADIO BEARER SETUP COMPLETE message to the SS to acknowledge the establishment of the RAB and the change of compressed mode method that were included in the RADIO BEARER SETUP message of step 6.

After step 8, the UE shall transmit a MEASUREMENT REPORT message triggered by frequency  $f_3$ .

After step 11, the UE shall send a RADIO BEARER SETUP COMPLETE message to acknowledge the establishment of the RAB and the compressed mode method change that were included in the RADIO BEARER SETUP message of step 11.

After step 13, the UE shall transmit a MEASUREMENT REPORT message triggered by frequency  $f_2$ . That message shall only include cell 4 within the IE event results.

After step 15, the UE shall send a RADIO BEARER RELEASE COMPLETE message to acknowledge the release of the RAB and the compressed mode method change that were included in the RADIO BEARER RELEASE message of step 15.

After step 17, the UE shall transmit a MEASUREMENT REPORT message triggered by frequency  $f_3$ .

#### 8.4.1.43 Measurement Control and Report: Compressed Mode Reconfiguration

##### 8.4.1.43.1 Definition

##### 8.4.1.43.2 Conformance requirement

If variable INVALID\_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS\_IDENTITY):
  - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
    - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.
  - 2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
    - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.
    - 3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS\_IDENTITY to "inactive".

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

- 1> update each pattern sequence to the variable TGPS\_IDENTITY according to the IE "TGPSI";
- 1> update into the variable TGPS\_IDENTITY the configuration information defined by IE group "transmission gap pattern sequence configuration parameters";
- 1> after the new configuration has been taken into use:

- 2> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in the variable TGPS\_IDENTITY is set to "activate" at the time indicated by IE "TGCFN"; and
- 2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
- 2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":
  - 3> start the concerned pattern sequence immediately at that CFN.
- 1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified in subclause 8.2.11.2.

If the IE "DPCCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is not included, the UE shall:

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS\_IDENTITY):
  - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
    - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use;
    - 3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS\_IDENTITY to "inactive".
  - 2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
    - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

- 1> after the new configuration has been taken into use:
  - 2> activate, at the time indicated by IE "TGCFN", the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate"; and
  - 2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
  - 2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":
    - 3> start the concerned pattern sequence immediately at that CFN.

For transmission gap pattern sequences stored in variable TGPS\_IDENTITY, but not identified in IE "TGPSI", the UE shall:

- 1> if the received message implies a timing re-initialised hard handover (see subclause 8.3.5.1):
  - 2> deactivate such transmission gap pattern sequences at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message; and
  - 2> set IE "Current TGPS Status Flag" in corresponding UE variable TGPS\_IDENTITY to 'inactive'.
- 1> if the received message not implies a timing re-initialised hard handover (see subclause 8.3.5.1):
  - 2> continue such transmission gap pattern sequence according to IE "Current TGPS Status Flag" in the corresponding UE variable TGPS\_IDENTITY.

Uplink and downlink compressed mode methods are described in [27]. For UL "higher layer scheduling" compressed mode method and transport format combination selection, see [15].

## Reference

3GPP TS 25.331 clause 8.6.6.15.

## 8.4.1.43.3 Test purpose

To confirm that the UE supports de-activation of compressed mode included in a RADIO BEARER SETUP message.

To confirm that the UE supports reconfiguration of transport channel parameters (rate reduction PS RAB) and change of compressed mode method included in a TRANSPORT CHANNEL RECONFIGURATION message.

To confirm that the UE supports change of compressed mode included in a RADIO BEARER RELEASE message.

To confirm that the UE supports reconfiguration of transport channel parameters (rate reduction PS RAB) without performing hard handover included in a TRANSPORT CHANNEL RECONFIGURATION message.

## 8.4.1.43.4 Method of test

## Initial Condition

System Simulator: 3 cells – Cell 1 on frequency  $f_1$ , cell 4 on frequency  $f_2$  and cell 5 on frequency  $f_3$ .

UE: "CS-DCCH + DTCH\_DCH" (state 6-9) as specified in clause 7.4 of TS 34.108. Ciphering shall be activated.

This test case applies only for UEs requiring compressed mode to perform inter-frequency measurements and supporting both PS and CS domains.

## Test Procedure

Table 8.4.1.43-1 illustrates the downlink power to be applied for the 3 cells, as well as the frequency and scrambling code for each cell.

Table 8.4.1.43-1a

Parameter	Unit	Cell 1					
Frequency		$f_1$					
Scrambling code		Scrambling code 1					
		T0	T1	T2	T3	T4	T5
CPICH Ec	dBm/3.8 4 MHz	-60	-70	-70	-60	-70	-70

Table 8.4.1.43-1b

Parameter	Unit	Cell 4						Cell 5					
Frequency		$f_2$						$f_3$					
Scrambling code		Scrambling code 3						Scrambling code 2					
		T0	T1	T2	T3	T4	T5	T0	T1	T2	T3	T4	T5
CPICH Ec	dBm/3.8 4 MHz	-95	-60	-60	-95	-60	-60	-95	-95	-60	-95	-95	-60

The UE is initially in CELL\_DCH, and has only cell 1 in its active set.

Next, SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to download compressed mode parameters in the UE without activating compressed mode. The UE shall answer with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

The SS then sets up inter-frequency measurements (event 2b), by sending a MEASUREMENT CONTROL message to the UE.

The SS establishes a PS domain RAB and de-activates compressed mode, by sending a RADIO BEARER SETUP message on DCCH using AM-RLC. The UE shall answer with a RADIO BEARER SETUP COMPLETE message.

At instant T1, the downlink power is changed according to what is shown in table 8.4.1.43-1. The SS shall then verify that the UE does not transmit a MEASUREMENT REPORT message.

Next the SS downloads compressed mode parameters and activates compressed mode by sending a PHYSICAL CHANNEL RECONFIGURATION message on DCCH using AM-RLC. The UE shall answer with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

Frequency  $f_2$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

Next, SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to reconfigure transport channel parameters (rate reduction PS RAB) and to change compressed mode method (to SF/2). The UE shall answer with a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message.

At instant T2, the downlink power is changed according to what is shown in table 8.4.1.43-1. Frequency  $f_3$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

At instant T3, the downlink power is changed according to what is shown in table 8.4.1.43-1. The increased quality of the used frequency should result in clearing of the concerning TRIGGERED\_2B\_EVENT.

Next, SS transmits a RADIO BEARER RELEASE message to release the CS domain RAB and change compressed mode method (from SF/2 to HLS). The UE shall answer with a RADIO BEARER RELEASE COMPLETE message.

At instant T4, the downlink power is changed according to what is shown in table 8.4.1.43-1. Frequency  $f_2$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

Next, SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to reconfigure transport channel parameters (rate increase PS RAB) – without performing hard handover. The UE shall answer with a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message.

At instant T5, the downlink power is changed according to what is shown in table 8.4.1.43-1. Frequency  $f_3$  shall then trigger event 2b, and the UE shall transmit a MEASUREMENT REPORT message to the SS.

#### Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	SS downloads compressed mode parameters (using SF/2 method) without activating compressed mode.
2		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE acknowledges the downloading of compressed mode parameters.
3		←	MEASUREMENT CONTROL	The SS configures inter-frequency measurements in the UE and activates compressed mode.
4		←	RADIO BEARER SETUP	SS establishes PS domain RAB and de- activates compressed mode.
5		→	RADIO BEARER SETUP COMPLETE	The UE acknowledges the establishment of the RAB and the de- activation of compressed mode
6				The SS changes the power of the cells according to column T1 in table 8.4.1.43-1.
7				SS verifies that the UE does not transmit a MEASUREMENT REPORT message to the SS.

8	←	PHYSICAL CHANNEL RECONFIGURATION	SS downloads compressed mode parameters (using HLS method) and activates compressed mode.
9	→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE acknowledges the downloading of compressed mode parameters and the activation of compressed mode.
10	→	MEASUREMENT REPORT	Frequency $f_2$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.
11	←	TRANSPORT CHANNEL RECONFIGURATION	SS reconfigures transport channel parameters (rate reduction PS RAB) and changes compressed mode method to SF/2.  Rate should be reduced to 0 kbps – no PS RAB room left to use for gap.
12	→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE acknowledges the transport channel reconfiguration and the change of compressed mode method
13			The SS changes the power of the cells according to column T2 in table 8.4.1.43-1.
14	→	MEASUREMENT REPORT	Frequency $f_3$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.
15			The SS changes the power of the cells according to T3 in table 8.4.1.43-1 (so the UE can trigger event 2b again for both frequencies).
16	←	RADIO BEARER RELEASE	SS releases the CS domain RAB (speech) and changes compressed mode method to HLS.
17	→	RADIO BEARER RELEASE COMPLETE	The UE acknowledges the release of the RAB and the compressed mode method change.
18			The SS changes the power of the cells according to column T4 in table 8.4.1.43-1.
19	→	MEASUREMENT REPORT	Frequency $f_2$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.



20	←	TRANSPORT CHANNEL RECONFIGURATION	SS reconfigures transport channel parameters (rate increase PS RAB) – without performing hard handover. SS includes TGCFNs for compressed mode.
21	→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE acknowledges the transport channel parameters change.
22			The SS changes the power of the cells according to column T5 in table 8.4.1.43-1.
23	→	MEASUREMENT REPORT	Frequency $f_3$ triggers event 2b in the UE, which sends a MEASUREMENT REPORT message to the SS.

### Specific Message Content

All messages shall use the same content as defined in [9] TS 34.108 clause 9, with the following exceptions:

#### PHYSICAL CHANNEL RECONFIGURATION MESSAGE (Step 1)

Information Element	Value/Remark
Activation time	Not Present
New U-RNTI	Not Present
New C-RNTI	Not Present
New DSCH-RNTI	Not Present
RRC State indicator	CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
Downlink counter synchronisation info	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
CHOICE <i>channel requirement</i>	Not Present
CHOICE <i>mode</i>	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	Not Present
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	FDD Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not Present
- TGD	<a href="#">undefined</a> <sup>⊖</sup>
- TGPL1	3
- TGPL2	Not Present
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL, UL only or DL only (depending on the UE capability)

- Downlink compressed mode method	SF/2(or not sent, depending on the UE capability)
- Uplink compressed mode method	SF/2(or not sent, depending on the UE capability)
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TX Diversity mode	Not Present
- SSDT information	Not Present
- Default DPCH Offset Value	Not Present
Downlink information for each radio link	Not Present

## MEASUREMENT CONTROL (Step 3)

Information Element	Value/Remark
Measurement Identity	2
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	2 inter-frequency cells
- Inter-frequency cell id	4
- Frequency info	
- UARFCN uplink (Nu)	UARFCN for the uplink corresponding to $f_2$
- UARFCN downlink (Nd)	UARFCN for the downlink corresponding to $f_2$
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Scrambling code 3
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Inter-frequency cell id	5
- Frequency info	
- UARFCN uplink (Nu)	UARFCN for the uplink corresponding to $f_3$
- UARFCN downlink (Nd)	UARFCN for the downlink corresponding to $f_3$
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	Not present
- Primary Scrambling Code	Scrambling code 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	Not present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE

- Non frequency related cell reporting quantities	No report
- SFN-SFN observed time difference reporting indicator	
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not present
- Measurement validity	
- UE State	CELL_DCH
- Inter-frequency set update	
- UE autonomous update	On with no reporting
- Non autonomous update mode	Not present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2b
- Threshold used frequency	-70 dBm
- W used frequency	0.0
- Hysteresis	1.0 dB
- Time to trigger	100 ms
- Reporting cell status	Report cells within monitored and/or virtual active set on non-used frequency
- Maximum number of reported cells per reported non-used frequency	2
- Parameters required for each non-used frequency	
- Threshold non used frequency	-65 dBm
- W non-used frequency	0
DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS Status Flag	Activate
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256

RADIO BEARER SETUP (Step 4)

Use the same message sub-type found in TS 34.108 clause 9, which is entitled "Packet to CELL\_DCH from CELL\_DCH in PS", with the following modifications:

Information Element	Value/Remark
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	De-activate
- TGCFN	Not present

PHYSICAL CHANNEL RECONFIGURATION MESSAGE (Step 8)

Information Element	Value/Remark
Activation time	Not Present
New U-RNTI	Not Present
New C-RNTI	Not Present
New DSCH-RNTI	Not Present
RRC State indicator	CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
Downlink counter synchronisation info	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
CHOICE <i>channel requirement</i>	Not Present
CHOICE <i>mode</i>	FDD
- Downlink PDSCH information	Not Present

Downlink information common for all radio links	Not Present
- Downlink DPCH info common for all RL	1
- DPCH compressed mode info	Deactivate
- TGPSI	Not present
- TGPS Status Flag	
- TGCFN	
- Transmission gap pattern sequence	
configuration parameters	FDD Measurement
- TGMP	Infinity
- TGPRC	4
- TGSN	7
- TGL1	Not Present
- TGL2	<a href="#">undefined</a>
- TGD	3
- TGPL1	Not Present
- TGPL2	Mode 0
- RPP	Mode 0
- ITP	UL and DL, UL only or DL only (depending on the UE capability)
- CHOICE UL/DL Mode	HLS(or not sent, depending on the UE capability)
- Downlink compressed mode method	HLS(or not sent, depending on the UE capability)
- Uplink compressed mode method	HLS(or not sent, depending on the UE capability)
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TX Diversity mode	Not Present
- SSDT information	Not Present
- Default DPCH Offset Value	Not Present
Downlink information for each radio link	Not Present

## MEASUREMENT REPORT (Step 10,19)

Information Element	Value/Remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	2
Measured Results	
- Inter-frequency measured results list	
- Frequency info	FDD
-CHOICE mode	Check that the value of this IE is set to UARFCN for the uplink corresponding to $f_2$ (Could be absent in case the duplex distance is the default duplex distance)
- UARFCN uplink	Check that the value of this IE is set to UARFCN for the downlink corresponding to $f_2$
- UARFCN downlink	Check that this IE is absent
- UTRA carrier RSSI	Check that the value of this IE is set to 1 cell reported
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check that this IE is absent

<ul style="list-style-type: none"> <li>- SFN-SFN observed time difference</li> <li>- Cell synchronisation information</li> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> <li>- CPICH Ec/N0</li> <li>- CPICH RSCP</li> <li>- Pathloss</li> </ul> <p>Measured results on RACH Additional measured results Event results</p> <ul style="list-style-type: none"> <li>- Inter-frequency measurement event results             <ul style="list-style-type: none"> <li>- Inter-frequency event identity</li> <li>- Inter-frequency cells                 <ul style="list-style-type: none"> <li>- Frequency info</li> <li>-CHOICE mode                     <ul style="list-style-type: none"> <li>- UARFCN uplink</li> </ul> </li> </ul> </li> <li>- UARFCN downlink</li> </ul> </li> <li>- Non freq related measurement event results             <ul style="list-style-type: none"> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> </ul> </li> </ul>	<p>Check that this IE is absent Check that this IE is absent</p> <p>Check that the value of this IE is set to Scrambling code 3 Check that this IE is absent Check that this IE is present Check that this IE is absent Check that this IE is absent Check that this IE is absent</p> <p>2b</p> <p>FDD Check that the value of this IE is set to UARFCN for the uplink corresponding to <math>f_2</math> (Could be absent in case the duplex distance is the default duplex distance) Check that the value of this IE is set to UARFCN for the downlink corresponding to <math>f_2</math></p> <p>Check that the value of this IE is set to Scrambling code 3</p>
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TRANSPORT CHANNEL RECONFIGURATION (Step 11)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled "Packet to CELL\_DCH from CELL\_DCH in PS" in 34.108 [9], with the following exceptions:

Information Element	Value/remark
UL Transport channel information for all transport channels	Do not include TFCs with TF's other than TF0 for PS RAB
Added or Reconfigured UL TrCH information	Reconfigure PS RAB TFS, only include TF0
DL Transport channel information common for all transport channel	Do not include TFCs with TF's other than TF0 for PS RAB
Added or Reconfigured DL TrCH information	Reconfigure PS RAB TFS, only include TF0
Frequency info	Not Present
Maximum allowed UL TX power	Not Present

MEASUREMENT REPORT (Step 14,23)

Information Element	Value/Remark
Message Type	
Integrity check info	
<ul style="list-style-type: none"> <li>- Message authentication code</li> <li>- RRC Message sequence number</li> </ul>	<p>This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.</p> <p>This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.</p>
Measurement identity	2
Measured Results	
<ul style="list-style-type: none"> <li>- Inter-frequency measured results list</li> <li>- Frequency info</li> <li>-CHOICE mode</li> <li>- UARFCN uplink</li> </ul>	<p>FDD Check that the value of this IE is set to UARFCN for the uplink corresponding to <math>f_2</math> or <math>f_3</math>(Could be absent in case the duplex distance is the default duplex distance)</p>
<ul style="list-style-type: none"> <li>- UARFCN downlink</li> </ul>	<p>Check that the value of this IE is set to UARFCN for the downlink corresponding to <math>f_2</math> or <math>f_3</math></p>
<ul style="list-style-type: none"> <li>- UTRA carrier RSSI</li> </ul>	Check that this IE is absent
<ul style="list-style-type: none"> <li>- Inter-frequency cell measurement results</li> </ul>	Check that the value of this IE is set to 1 cell reported
<ul style="list-style-type: none"> <li>- Cell measured results</li> </ul>	
<ul style="list-style-type: none"> <li>- Cell Identity</li> </ul>	Check that this IE is absent
<ul style="list-style-type: none"> <li>- SFN-SFN observed time difference</li> </ul>	Check that this IE is absent

<ul style="list-style-type: none"> <li>- Cell synchronisation information</li> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li>   <li>- CPICH Ec/N0</li> <li>- CPICH RSCP</li> <li>- Pathloss</li> <li>- Frequency info</li> <li>-CHOICE mode</li> <li>- UARFCN uplink</li>   <li>- UARFCN downlink</li>   <li>- UTRA carrier RSSI</li> <li>- Inter-frequency cell measurement results</li> <li>- Cell measured results</li> <li>- Cell Identity</li> <li>- SFN-SFN observed time difference</li> <li>- Cell synchronisation information</li> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li>   <li>- CPICH Ec/N0</li> <li>- CPICH RSCP</li> <li>- Pathloss</li> </ul> <p>Measured results on RACH Additional measured results Event results</p> <ul style="list-style-type: none"> <li>- Inter-frequency measurement event results <ul style="list-style-type: none"> <li>- Inter-frequency event identity</li> <li>- Inter-frequency cells <ul style="list-style-type: none"> <li>- Frequency info</li> <li>-CHOICE mode</li> <li>- UARFCN uplink</li> </ul> </li> </ul> </li>   <li>- UARFCN downlink</li>   <li>- Non freq related measurement event results <ul style="list-style-type: none"> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> </ul> </li>   <li>- Frequency info <ul style="list-style-type: none"> <li>-CHOICE mode</li> <li>- UARFCN uplink</li> </ul> </li>   <li>- UARFCN downlink</li>   <li>- Non freq related measurement event results <ul style="list-style-type: none"> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> </ul> </li> </ul>	<p>Check that this IE is absent</p> <p>Check that the value of this IE is set to Scrambling code 3 (on <math>f_2</math>) or Scrambling code 2 (on <math>f_3</math>)</p> <p>Check that this IE is absent</p> <p>Check that this IE is present</p> <p>Check that this IE is absent</p> <p>FDD</p> <p>Check that the value of this IE is set to UARFCN for the uplink corresponding to <math>f_2</math> or <math>f_3</math>(Could be absent in case the duplex distance is the default duplex distance)</p> <p>Check that the value of this IE is set to UARFCN for the downlink corresponding to <math>f_2</math> or <math>f_3</math></p> <p>Check that this IE is absent</p> <p>Check that the value of this IE is set to 1 cell reported</p> <p>Check that this IE is absent</p> <p>Check that this IE is absent</p> <p>Check that this IE is absent</p> <p>Check that the value of this IE is set to Scrambling code 3 (on <math>f_2</math>) or Scrambling code 2 (on <math>f_3</math>)</p> <p>Check that this IE is absent</p> <p>Check that this IE is present</p> <p>Check that this IE is absent</p> <p>Check that this IE is absent</p> <p>Check that this IE is absent</p> <p>2b</p> <p>FDD</p> <p>Check that the value of this IE is set to UARFCN for the uplink corresponding to <math>f_2</math> or <math>f_3</math>(Could be absent in case the duplex distance is the default duplex distance)</p> <p>Check that the value of this IE is set to UARFCN for the downlink corresponding to <math>f_2</math> or <math>f_3</math></p> <p>Check that the value of this IE is set to Scrambling code 3 (on <math>f_2</math>) or Scrambling code 2 (on <math>f_3</math>)</p> <p>FDD</p> <p>Check that the value of this IE is set to UARFCN for the uplink corresponding to <math>f_2</math> or <math>f_3</math>(Could be absent in case the duplex distance is the default duplex distance)</p> <p>Check that the value of this IE is set to UARFCN for the downlink corresponding to <math>f_2</math> or <math>f_3</math></p> <p>Check that the value of this IE is set to Scrambling code 3 (on <math>f_2</math>) or Scrambling code 2 (on <math>f_3</math>)</p>
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## RADIO BEARER RELEASE (Step 16)

Use the same message sub-type found in TS 34.108 clause 9, which is entitled "Packet to CELL\_DCH from CELL\_DCH in PS", with the following modifications:

Information Element	Value/Remark
---------------------	--------------

- DPCH compressed mode info	1
- TGPSI	Activate
- TGPS Status Flag	(Current CFN + (256 – TTI/10msec))mod 256
- TGCFN	
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not Present
- TGD	<a href="#">undefined</a>
- TGPL1	3
- TGPL2	Not Present
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL, UL only or DL only (depending on the UE capability)
- Downlink compressed mode method	HLS(or not sent, depending on the UE capability)
- Uplink compressed mode method	HLS(or not sent, depending on the UE capability)
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present

8.4.1.43.5 Test Requirement

After step 1, the UE shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS to acknowledge the downloading of the compressed mode parameters without activating compressed mode that were included in the PHYSICAL CHANNEL RECONFIGURATION message of step 1.

After step 4, the UE shall send a RADIO BEARER SETUP COMPLETE message to acknowledge the establishment of the PS domain RAB and the de- activation of compressed mode that were included in the RADIO BEARER SETUP message of step 4.

After step 6, the UE shall not transmit a MEASUREMENT REPORT message.

After step 8, the UE shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS to acknowledge the downloading of the compressed mode parameters and the activation of compressed mode that were included in the PHYSICAL CHANNEL RECONFIGURATION message of step 8.

After step 9, the UE shall transmit a MEASUREMENT REPORT message triggered by frequency f<sub>2</sub>. That message shall only include cell 4 within the IE event results.

After step 11, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to the SS to acknowledge the change of transport channel parameters and the change of compressed mode method that were included in the TRANSPORT CHANNEL RECONFIGURATION message of step 11.

After step 13, the UE shall transmit a MEASUREMENT REPORT message triggered by frequency f<sub>3</sub>.

After step 17, the UE shall transmit a RADIO BEARER RELEASE COMPLETE message to the SS to acknowledge the release of the RAB and the change of compressed mode method that were included in the RADIO BEARER RELEASE message of step 17.

After step 18, the UE shall transmit a MEASUREMENT REPORT message triggered by frequency f<sub>2</sub>. That message shall only include cell 4 within the IE event results.

After step 20, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to the SS to acknowledge the change of transport channel parameters that were included in the TRANSPORT CHANNEL RECONFIGURATION message of step 20.

After step 22, the UE shall transmit a MEASUREMENT REPORT message triggered by frequency f<sub>3</sub>.

<End of modified section>



## CHANGE REQUEST

№ **34.123-1 CR 624** № rev **5.5.0** № Current version: **5.5.0** №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	№ Corrections to P2 GMM test case 12.4.2.2		
<b>Source:</b>	№ Motorola		
<b>Work item code:</b>	№ TEI	<b>Date:</b>	№ 27-10-2003
<b>Category:</b>	№ <b>F</b>	<b>Release:</b>	№ Rel-5
	<i>Use <u>one</u> of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use <u>one</u> of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	№ As per section 4.2.5.1.7 Substate, ATTEMPTING-TO-UPDATE-MM of 3GPP TS 24.008: “The MS shall: - perform routing area update indicating "combined RA/LA updating with IMSI attach" when the routing area of the serving cell has changed and the location area this cell is belonging to is not in the list of forbidden LAs;” Based on the above, update type shall be “combined RA/LA updating with IMSI attach” instead of “combined RA/LA updating” in RAU of step 14.		
<b>Summary of change:</b>	№ In step 14 of the test sequence, update type changed to ‘combined RA/LA updating with IMSI attach’.		
<b>Consequences if not approved:</b>	№ Test as specified is not conformant to the core specification		

<b>Clauses affected:</b>	№ 12.4.2.2									
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	№ 51.010-1 Test Case 44.2.3.2.2
Y	N									
<input type="checkbox"/>	<input checked="" type="checkbox"/>									
<input checked="" type="checkbox"/>	<input type="checkbox"/>									
<input type="checkbox"/>	<input checked="" type="checkbox"/>									
<b>Other comments:</b>	№ Affects R99, REL-4, REL-5.									

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## 12.4.2.2 Combined routing area updating / UE in CS operation at change of RA

12.4.2.2.1 Definition

12.4.2.2.2 Conformance requirement

PS UE in UE operation mode A that is in an ongoing CS transaction at change of routing area shall initiate the normal routing area updating procedure.

### Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.2.3 Test purpose

To test the behaviour of the UE if the routing area is changed during an ongoing circuit switched transmission.

12.4.2.2.4 Method of test

### Initial condition

#### System Simulator:

One cell, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) is operating in network operation mode I.

#### User Equipment:

The UE has a valid IMSI.

### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

### Test procedure

A combined PS attach procedure is performed. The UE in UE operation mode A initiates a CS call. The routing area change. The UE will perform the normal routing area updating procedure during the ongoing circuit-switched transaction.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1				Set the cell type of cell A to the "Serving cell". (see note)
1a	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach'  Mobile identity =IMSI TMSI status = no valid TMSI available
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached'  Mobile identity = P-TMSI-2  P-TMSI-2 signature  Routing area identity = RAI-1
5		->	ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
6		UE		A CS call is initiated.
7			Void	
8			Void	
8a		<-	UTRAN MOBILITY INFORMATION	The SS conveys updated CN system information for the PS domain to the UE in connected mode, including a new routing area code.
8b		->	UTRAN MOBILITY INFORMATION CONFIRM	
9		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating'  P-TMSI-2 signature  Routing area identity = RAI-1
9a		SS		The SS starts integrity protection.

10	<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
11	->	ROUTING AREA UPDATE COMPLETE	
11a	SS		The SS releases the PS signalling connection, but keeps the RRC connection.
12	<-	PAGING TYPE2	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	->	SERVICE REQUEST	service type = "paging response"
13a	SS		The SS starts integrity protection.
13b	SS		The SS releases the CS call.
14	SS		The SS initiates the RRC connection release.
14a	->	ROUTING AREA UPDATE REQUEST	Update type = "combined RA/LA updating <a href="#">with IMSI Attach</a> ", P-TMSI-1 signature, Routing area identity = RAI-4, TMSI status = no valid TMSI available
14b	SS		The SS starts integrity protection.
14c	<-	ROUTING AREA UPDATE ACCEPT	Update result = "combined RA/LA updated", No P-TMSI, P-TMSI-3 signature, Routing area identity = RAI-4
15	UE		The UE is switched off or power is removed (see ICS).
15a	SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
16	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
17	SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

## Specific message contents

### UTRAN MOBILITY INFORMATION (step 8a)

The contents of the UTRAN MOBILITY INFORMATION message in this test case is identical to the default message in TS 34.108, with the following exceptions.

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode	Not Present
CN information info	
- PLMN identity	Not Present
- CN common GSM-MAP NAS system information	Not Present
- CN domain related information	
- CN domain identity	CS domain
- CN domain specific GSM-MAP NAS system info	
- T3212	30
- ATT	1
- CN domain specific DRX cycle length coefficient	7
- CN domain related information	
- CN domain identity	PS domain
- CN domain specific GSM-MAP NAS system info	
- RAC	RAC-2
- NMO	0 (Network Mode of Operation I)
- CN domain specific DRX cycle length coefficient	7

#### 12.4.2.2.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the UE has received the new RAI from the SS in the UTRAN MOBILITY INFORMATION message, the UE shall:

- initiate the normal routing area updating procedure.

## CHANGE REQUEST

№ **34.123-1 CR 625** № rev **5.5.0** № Current version: **5.5.0** №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	№ Corrections to P2 GMM test case 12.4.1.4c		
<b>Source:</b>	№ Motorola		
<b>Work item code:</b>	№ TEI	<b>Date:</b>	№ 27-10-2003
<b>Category:</b>	№ <b>F</b>	<b>Release:</b>	№ Rel-5
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	№ Incorrect statement in initial condition of system simulator regarding operation mode of UE. The test case is only applicable for UE in operating mode C.
<b>Summary of change:</b>	№ Removed statement "(in case of UE operation mode A)"
<b>Consequences if not approved:</b>	№ Incorrect implementation of the test case

<b>Clauses affected:</b>	№ 12.4.1.4c										
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications Test specifications O&M Specifications	№
Y	N										
	X										
	X										
	X										
<b>Other comments:</b>	№ Affects R99, REL-4, REL-5.										

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.



## 12.4.1.4c Routing area updating / rejected / PS services not allowed in this PLMN

12.4.1.4c.1 Definition

12.4.1.4c.2 Conformance requirement

If the network rejects a routing area updating procedure from the User Equipment with the cause 'PS service not allowed in this PLMN', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.
- shall set the PS update status to GU3 ROAMING NOT ALLOWED.
- store the PLMN identity in the "forbidden PLMNs for PS service" list.
- not delete the equivalent PLMN list.

UE shall perform the following actions depending on the update type, UE operation mode and network operation mode.

1) UE is in UE operation mode C

UE shall perform a PLMN selection instead of a cell selection.

2) UE is in UE operation mode A, update type = periodic updating and Network is in network operation mode I

UE shall set the timer T3212 to its initial value and restart it, if it is not already running.

3) UE is in UE operation mode A and Network is in network operation mode II.

UE shall be still IMSI attached for CS services in the network.

### Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.4c.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'PS services not allowed in this PLMN'.

12.4.1.4c.4 Method of test

#### Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).

All three cells are operating in network operation mode II (~~in case of UE operation mode A~~).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

The UE is in UE operation mode C.

#### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No



Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following messages are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included. Attach result = 'PS only attached' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Routing area identity = RAI-1

9	<-	ROUTING AREA UPDATE REJECT	GMM cause = 'PS services not allowed in this PLMN'
10	<-	PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II).  Paging order is for PS services.
11	UE		No response from the UE to the request. This is checked for 10 seconds.
12	SS		Set the cell type of cell B to the "Non-Suitable cell".  Set the cell type of cell A to the "Serving cell".  (see note)
13	UE		The UE performs PLMN selection.
14	UE		No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
12	SS		Set the cell type of cell A to the "Non-Suitable cell".  Set the cell type of cell C to the "Serving cell".  (see note)
17	->	ATTACH REQUEST	Update type = 'PS attach'  Mobile identity = IMSI
17a	<-	AUTHENTICATION AND CIPHERING REQUEST	
17b	->	AUTHENTICATION AND CIPHERING RESPONSE	
17c	SS		The SS starts integrity protection.
18	<-	ATTACH ACCEPT	Update result = 'PS only attached'  Mobile identity = P-TMSI-1  P-TMSI-1 signature Routing area identity = RAI-2
19	->	ATTACH COMPLETE	
20	UE		The UE is switched off or power is removed (see ICS).
21	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
22	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

CR-Form-v7

## CHANGE REQUEST

# 34.123-1 CR 592r1 # rev - # Current version: 5.5.0 #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	# Maintenance of low priority test case 11.2.1 Network initiated PDP context modification		
<b>Source:</b>	# NEC		
<b>Work item code:</b>	# TEI	<b>Date:</b>	# 22/10/2003
<b>Category:</b>	# <b>F</b>	<b>Release:</b>	# Rel-5
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	# 1. Conformance requirement not in line with T1Sig agreed policy 2. Expected sequence needs clarification
<b>Summary of change:</b>	# 1. Text in Conformance requirement sub-clause replaced with a copy of conformance requirement from the core spec. 2. Table Expected sequence clarified with additional comments related to the SS
<b>Consequences if not approved:</b>	# Unclear conformance requirement and expected sequence.

<b>Clauses affected:</b>	# 11.2.1.2, 11.2.1.4										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="width: 20px; text-align: center;">#</td> <td style="width: 20px; text-align: center;">#</td> </tr> <tr> <td style="width: 20px; text-align: center;">#</td> <td style="width: 20px; text-align: center;">#</td> </tr> <tr> <td style="width: 20px; text-align: center;">#</td> <td style="width: 20px; text-align: center;">#</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	#	#	#	#	#	#		
Y	N										
#	#										
#	#										
#	#										
<b>Other comments:</b>	# Affects to R99, Rel-4 and Rel-5										

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<Start of modified section>

## 11.2 PDP context modification procedure

### 11.2.1 Network initiated PDP context modification

#### 11.2.1.1 Definition

This test can only be performed if minimum QoS can be set by the user.

#### 11.2.1.2 Conformance requirement

In order to initiate the procedure, the network sends the MODIFY PDP CONTEXT REQUEST message to the UE and starts timer T3386. The message shall contain the new QoS and the radio priority level and LLC SAPI that shall be used by the UE in GSM at the lower layers for the transmission of data related to the PDP context.

Upon receipt of this message the UE shall reply with the MODIFY PDP CONTEXT ACCEPT message, if the UE accepts the new QoS and the indicated LLC SAPI.

If the UE does not accept the new QoS or the indicated LLC SAPI, the UE shall initiate the PDP context deactivation procedure for the PDP context - the reject cause IE value of the DEACTIVATE PDP CONTEXT REQUEST message shall indicate "QoS not accepted".

The network shall upon receipt of the MODIFY PDP CONTEXT ACCEPT message stop timer T3386.

In UMTS, the network shall establish, reconfigure or continue using the Radio Access Bearer with the new QoS indicated in the MODIFY PDP CONTEXT REQUEST message.

#### ~~1) Upon receipt of a MODIFY PDP CONTEXT REQUEST message~~

~~— If the UE can accept the modification requested, the UE shall reply with the MODIFY PDP CONTEXT ACCEPT message.~~

~~— If the UE is unable to accept the modification requested, the UE shall initiate the PDP context deactivation procedure for the NSAPI that has been indicated in the message MODIFY PDP CONTEXT REQUEST—the reject cause IE value of the DEACTIVATE PDP CONTEXT REQUEST message shall indicate "QoS not accepted".~~

#### ~~2) The UE shall either accept the modification request or deactivate the PDP context, it shall not ignore the modification request.~~

#### Reference

3GPP TS 24.008 clauses 6.1.3.3 and 6.1.3.3.1.

#### 11.2.1.3 Test purpose

To test ~~the~~ behaviour of the UE upon receipt of a MODIFY PDP CONTEXT REQUEST message from SS.

#### 11.2.1.4 Method of test

#### Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:



The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

Related ICS/IXIT statements

- PS Supported yes/no
- User setting of Minimum QoS supported yes/no
- Method of setting minimum QoS
- Method of activating a PDP context

Test procedure

The requested QoS and Minimum QoS are set. A PDP context is activated by the user and accepted by the SS. A MODIFY PDP CONTEXT REQUEST message is then sent to the UE with a QoS that is acceptable to the UE (higher than or equal to the minimum QoS set in the UE). The UE shall send a MODIFY PDP CONTEXT ACCEPT message in return. A MODIFY PDP CONTEXT REQUEST message is then sent to the UE with a QoS that is not acceptable to the UE (lower than the minimum QoS set in the UE). The UE shall send a DEACTIVATE PDP CONTEXT REQUEST message in return.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		UE		Initiate a PDP context activation
2		→	ACTIVATE PDP CONTEXT REQUEST	Activate the PDP context
<a href="#">2a</a>		SS		<a href="#">SS establishes RAB</a>
3		←	ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
4		←	MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Request the modification of a PDP context, with QoS higher than or equal to the minimum QoS set in the UE <a href="#">and start timer T3386.</a>
5		→	MODIFY PDP CONTEXT ACCEPT (UE TO NETWORK DIRECTION)	Accept the PDP context modification
<a href="#">5a</a>		SS		<a href="#">Stop timer T3386 and reconfigure the RAB</a>
6		←	MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Request the modification of a PDP context, QoS lower than the minimum QoS set in the UE <a href="#">and start timer T3386.</a>
7		→	DEACTIVATE PDP CONTEXT REQUEST	Initiate the PDP context deactivation. Cause set to 'QoS not acceptable'
8		←	DEACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context deactivation <a href="#">and stop timer T3386.</a>

Specific message contents

None.

11.2.1.5 Test requirements

The UE shall:

- Accept PDP context modification initiated by the SS if QoS is higher than or equal to the minimum QoS set in the UE.
- Reject PDP context modification initiated by the SS if QoS is lower than the minimum QoS set in the UE.

<End of modified section>

3GPP TSG T1 Meeting #21  
 Budapest, Hungary, 3<sup>rd</sup> – 7<sup>th</sup> November 2003

Tdoc # T1-031494

CR-Form-v7	CHANGE REQUEST
⌘ <b>TS 34.123-1 CR 628</b> ⌘ rev <b>-</b> ⌘ Current version: <b>5.5.0</b> ⌘	

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections to 34.123-1 v5.5.0 Package 3 test case 8.3.2.11		
<b>Source:</b>	⌘ Panasonic		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 22/10/03
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ At T2, power level of cell B is set to -79, hence, this cell will become unsuitable to camp due to default value of Qqualmin and UE/SS tolerences.
<b>Summary of change:</b>	⌘ To avoid unnecessary signalling, and allow TTCN to check UE state in URA PCH on Cell B in the end, this CR propose to change the power of cell B at T2 to -73dBm and cell C to -66dBm.
<b>Consequences if not approved:</b>	⌘ This test case could fail good UE.

<b>Clauses affected:</b>	⌘ 8.3.2.11						
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;">N</td> </tr> <tr> <td style="padding: 2px 5px;"><input type="checkbox"/></td> <td style="padding: 2px 5px;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	
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	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 2px 5px;"><input type="checkbox"/></td> <td style="padding: 2px 5px;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘			
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	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 2px 5px;"><input type="checkbox"/></td> <td style="padding: 2px 5px;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘			
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>Other comments:</b>	⌘ Affects R'99, Rel-4 and Rel-5 UEs.						

**How to create CRs using this form:**

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- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

### 8.3.2.11 URA Update: Cell reselection to cell of another PLMN belonging to the equivalent PLMN list

#### 8.3.2.11.1 Definition

#### 8.3.2.11.2 Conformance requirement

1. A UE in URA\_PCH state shall initiate the URA update procedure in the following cases:
  - URA reselection:
    - if the UE detects that the current URA assigned to the UE, stored in the variable URA\_IDENTITY, is not present in the list of URA identities in system information block type 2; or
    - if the list of URA identities in system information block type 2 is empty; or
    - if the system information block type 2 can not be found:
      - perform URA update using the cause "change of URA".
2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.
  - The cell is part of the selected PLMN or, of a PLMN considered as equivalent by the UE according to the information provided by the NAS.
  - The cell is not barred, see clause 5.3.1.1 in TS 25.304.
  - The cell is not part of the list of "forbidden LAs for roaming" TS 22.011
  - The cell selection criteria are fulfilled, see clause 5.2.3.1.2 in TS 25.304.
3. The Mobile Equipment shall store a list of "equivalent PLMNs". This list is replaced or deleted at the end of each location update procedure, routing area update procedure and GPRS attach procedure. The stored list consists of a list of equivalent PLMNs as downloaded by the network plus the PLMN code of the network that downloaded the list. The stored list shall not be deleted when the MS is switched off. The stored list shall be deleted if the SIM is removed. The maximum number of possible entries in the stored list is six.

#### Reference

3GPP TS 25.331 clause 8.3.1.2.

3GPP TS 25.304 clause 4.3.

3GPP TS 24.008 clause 4.4.1.

#### 8.3.2.11.3 Test purpose

1. To confirm that the UE executes a URA update procedure after a successful reselection of another UTRA cell with a URA identity that is not the URA of the UE and with a PLMN identity different from the original cell but with a PLMN that is part of the equivalent PLMN list in the UE.

NOTE: Verifies conformance requirements 1, 2 and 3.

2. To confirm that the UE refrains from executing a URA update procedure to a better UTRA cell with another PLMN identity when that PLMN identity is not part of the equivalent PLMN list in the UE.

NOTE: Test case in 8.3.2.1 is a test where the UE reselects to a cell with the same PLMN identity as the registered PLMN.

## 8.3.2.11.4 Method of test

## Initial Condition

System Simulator: 3 cells - Cell 1 is active, with the downlink transmission power shown in column marked "T0" in table 8.3.2.1-1, while cell 2 and cell 3 is inactive.

UE: URA\_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

UE: Shall have stored equivalent PLMN list containing PLMN-1 and PLMN-2. The equivalent PLMN list stored in the UE shall not contain PLMN-3. The UE shall also have stored the URA identity URA-ID 1 from the list of URA-IDs in cell 1.

## Test Procedure

Table 8.3.2.11-1

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Ch. 1			Ch. 1			Ch. 1		
PLMN identity		PLMN-1			PLMN-2			PLMN-3		
URA identity		URA-ID 1			URA-ID 2			URA-ID 3		
CPICH Ec (FDD)	dBm/ 3.84 MHz	-73	-79	-79	Cell 2 is switched off	-73	<del>-79</del> 73	Cell 3 is switched off	Cell 3 is switched off	<del>-73</del> 66
P-CCPCH RSCP (TDD)	dBm	-62	-68	-68	Cell 2 is switched off	-62	-68	Cell 3 is switched off	Cell 3 is switched off	-62

Table 8.3.2.11-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1" and "T2" are to be applied subsequently.

- At T0, the SS activates Cell 1.
- At T1, the SS activates Cell 2, and monitors Cell 2 for received messages from UE.
- UE re-selects to Cell 2, and sends a URA UPDATE message. The SS replies with an URA UPDATE CONFIRM message on the downlink CCCH.
- At T2, the SS activates Cell 3, and monitors Cell 3 for received messages from UE.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is in URA_PCH state, camped on Cell 1 and registered to PLMN1. SS applies downlink transmission power settings according to values in column "T0" of table 8.3.2.11-1.
1a				SS applies downlink transmission power settings according to values in column "T1" of table 8.3.2.11-1.
2		→	URA UPDATE	The UE moves to CELL_FACH state and transmits this message in Cell 2. The value "change of URA" shall be set in IE "URA update cause".
3		←	URA UPDATE CONFIRM	The value "URA_PCH" set in IE "RRC State Indicator".
4				SS applies downlink transmission power settings according to values in column "T2" of table 8.3.2.11-1.
5				SS monitors that the UE does not send a URA UPDATE message or any other message.

Specific Message Contents

URA UPDATE (Step 2)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
URA Update Cause	Check to see if set to 'change of URA'

URA UPDATE CONFIRM (Step 3)

Use the same message sub-type found in TS 34.108 clause 9.

8.3.2.11.5 Test requirement

After Step 1 the UE shall send a URA UPATE message.

After Step 4 the UE shall refrain from sending a URA update (or any other message).

3GPP TSG T1 Meeting #21  
 Budapest, Hungary, 3<sup>rd</sup> – 7<sup>th</sup> November 2003

Tdoc # T1-031496

CR-Form-v7
CHANGE REQUEST
⌘ <b>TS 34.123-1 CR 630</b> ⌘ rev <b>-</b> ⌘ Current version: <b>5.5.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections to 34.123-1 v5.5.0 low priority test cases 8.2.5.4
<b>Source:</b>	⌘ Panasonic
<b>Work item code:</b>	⌘ TEI <span style="float: right;"><b>Date:</b> ⌘ 27/10/03</span>
<b>Category:</b>	⌘ <b>F</b> <span style="float: right;"><b>Release:</b> ⌘ Rel-5</span> Use <u>one</u> of the following categories: <span style="float: right;">Use <u>one</u> of the following releases:</span> <b>F</b> (correction) <span style="float: right;">2 (GSM Phase 2)</span> <b>A</b> (corresponds to a correction in an earlier release) <span style="float: right;">R96 (Release 1996)</span> <b>B</b> (addition of feature), <span style="float: right;">R97 (Release 1997)</span> <b>C</b> (functional modification of feature) <span style="float: right;">R98 (Release 1998)</span> <b>D</b> (editorial modification) <span style="float: right;">R99 (Release 1999)</span> Detailed explanations of the above categories can <span style="float: right;">Rel-4 (Release 4)</span> be found in 3GPP <a href="#">TR 21.900</a> . <span style="float: right;">Rel-5 (Release 5)</span> <span style="float: right;">Rel-6 (Release 6)</span>

<b>Reason for change:</b>	⌘ It is not possible to use critical extension in TRANSPORT FORMAT COMBINATION CONTROL message and therefore step 2 of TC 8.2.5.4 cannot be implemented.  In 25.331, the order in which the RBs are reported in the Measurement Report for traffic volume is not specified.
<b>Summary of change:</b>	⌘ Remove testing of reception of invalid TRANSPORT FORMAT COMBINATION CONTROL message by the UE.  A note has been added to the specific message content of Measurement Report message to state that the order in which the RBs are reported in the Measurement Report message for traffic volume measurement is not checked.
<b>Consequences if not approved:</b>	⌘ This test case could not be implemented.

<b>Clauses affected:</b>	⌘ 8.2.5.4												
<b>Other specs affected:</b>	<table style="border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;">Y</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">N</td> <td rowspan="3" style="padding-left: 10px;">Other core specifications</td> <td rowspan="3" style="padding-left: 10px;">⌘</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;">X</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">X</td> <td>Test specifications</td> <td></td> </tr> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;">X</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">X</td> <td>O&amp;M Specifications</td> <td></td> </tr> </table>	Y	N	Other core specifications	⌘	X	X	Test specifications		X	X	O&M Specifications	
Y	N	Other core specifications	⌘										
X	X					Test specifications							
X	X			O&M Specifications									
<b>Other comments:</b>	⌘ Affects R'99, Rel-4 and Rel-5 UEs.												

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#### 8.2.5.4 Transport format combination control in CELL\_DCH: Failure (~~Invalid message reception and~~ Invalid configuration)

##### 8.2.5.4.1 Definition

##### 8.2.5.4.2 Conformance requirement

~~If the TRANSPORT FORMAT COMBINATION CONTROL message contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:~~

- ~~1> transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the uplink DCCH using AM RLC setting the information elements as specified below:~~
  - ~~2> set the IE "RRC transaction identifier" in the TRANSPORT FORMAT COMBINATION CONTROL FAILURE message to the value of "RRC transaction identifier" in the entry for the TRANSPORT FORMAT COMBINATION CONTROL message in the table "Rejected transactions" in the variable TRANSACTIONS; and~~
  - ~~2> clear that entry;~~
  - ~~2> set the IE "failure cause" to the cause value "protocol error";~~
  - ~~2> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION.~~
- ~~1> when the TRANSPORT FORMAT COMBINATION CONTROL FAILURE message has been submitted to lower layers for transmission:~~
  - ~~2> continue with any ongoing processes and procedures as if the invalid TRANSPORT FORMAT COMBINATION CONTROL message has not been received;~~
  - ~~2> and the procedure ends.~~

If the variable INVALID\_CONFIGURATION is set to TRUE due to the received TRANSPORT FORMAT COMBINATION CONTROL message the UE shall:

- 1> if the TRANSPORT FORMAT COMBINATION CONTROL message was received on AM RLC:
  - 2> keep the TFC subset existing before the TRANSPORT FORMAT COMBINATION CONTROL message was received;
  - 2> transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the DCCH using AM RLC;
  - 2> set the IE "RRC transaction identifier" in the TRANSPORT FORMAT COMBINATION CONTROL FAILURE message to the value of "RRC transaction identifier" in the entry for the TRANSPORT FORMAT COMBINATION CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "invalid configuration";
  - 2> when the TRANSPORT FORMAT COMBINATION CONTROL FAILURE message has been submitted to lower layers for transmission the procedure ends.

- 1> if the TRANSPORT FORMAT COMBINATION CONTROL message was received on UM RLC:
- 2> ignore the TRANSPORT FORMAT COMBINATION CONTROL message.

#### Reference

3GPP TS 25.331 clause 8.2.5.4, 8.2.5.5

#### 8.2.5.4.3 Test purpose

~~To confirm after the UE receives an invalid TRANSPORT FORMAT COMBINATION CONTROL message which contains an unexpected critical message extension, it transmits a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message and keeps the TFC subset as if no TRANSPORT FORMAT COMBINATION CONTROL message has been received.~~

To confirm that the UE transmits a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the DCCH using AM RLC if it receives a TRANSPORT FORMAT COMBINATION CONTROL message including an invalid configuration.

#### 8.2.5.4.4 Method of test

##### Initial Condition

System Simulator: 1 cell.

UE: DCCH+DTCH\_DCH (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

##### Test Procedure

The UE is in CELL\_DCH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. ~~The SS transmits an invalid TRANSPORT FORMAT COMBINATION CONTROL message which contains an unexpected critical message extension. The UE shall transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message which is set to "Message extension not comprehended" in IE "Protocol error cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.~~ SS transmits a TRANSPORT FORMAT COMBINATION CONTROL message including some IEs set to get an invalid configuration. The UE keeps its current configuration and transmits a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1				UE is in CELL_DCH state with a DCH for a signalling radio bearer and a DCH for a radio access bearer.
2		←	<del>TRANSPORT FORMAT COMBINATION CONTROL</del> Void	<del>See specific message content.</del>
3		→	<del>TRANSPORT FORMAT COMBINATION CONTROL FAILURE</del> Void	<del>The UE shall not change its configuration because Message extension not comprehended</del>
3a		→	<del>MEASUREMENT REPORT</del> Void	
4		←	TRANSPORT FORMAT COMBINATION CONTROL	This message includes an invalid configuration.
5		→	TRANSPORT FORMAT COMBINATION CONTROL FAILURE	The UE shall not change its configuration
6		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b, ~~3a~~ and 6)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions:

The order in which the RBs are reported is not checked.

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

~~TRANSPORT FORMAT COMBINATION CONTROL (Step 2)~~

~~Use the same message sub-type found in [9] TS 34.108 clause 9, with the following exceptions:~~

Information Element	Value/remark
<del>Critical extensions</del>	<del>'04'H</del>

~~TRANSPORT FORMAT COMBINATION CONTROL FAILURE (Step 3)~~

~~The same message found in TS 34.108 clause 9 shall be transmitted by the UE, with the following exceptions:~~

Information Element	Value/remark
<del>RRC transaction identifier</del>	<del>Checked to see if it is set to identical value of the same IE in the downlink TRANSPORT FORMAT COMBINATION CONTROL message.</del>
<del>Failure cause</del>	
<del>—Failure cause</del>	<del>Protocol error</del>
<del>—Protocol error information</del>	
<del>—Protocol error cause</del>	<del>Message extension not comprehended</del>

TRANSPORT FORMAT COMBINATION CONTROL (Step 4)

Use the same message sub-type titled "TRANSPORT FORMAT COMBINATION CONTROL" in [9] TS 34.108 clause 9, with following exceptions:

Information Element	Value/remark
TrCH information elements	
-DPCH/PUSCH TFCS uplink in uplink	
- Restricted TrCH information	
- Uplink transport channel type	DCH
- Restricted UL TrCH identity	15 ( for RACH transport channel identity)
- Allowed TFI	0

## TRANSPORT FORMAT COMBINATION CONTROL FAILURE (Step 5)

Information Element	Value/remark
RRC transaction identifier	Checked to see if it is set to identical value of the same IE in the downlink TRANSPORT FORMAT COMBINATION CONTROL message.
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Failure cause	Invalid configuration

## 8.2.5.4.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

~~After step 2 the UE shall transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the DCCH using AM RLC. The UE shall set the value "protocol error" in IE "Failure cause" and the value "Message extension not comprehended" in IE "protocol error information".~~

~~After step 3, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.~~

After step 4 the UE shall transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "invalid configuration".

After step 5, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

3GPP TSG T1 Meeting #21  
 Budapest, Hungary, 3<sup>rd</sup> – 7<sup>th</sup> November 2003

Tdoc # T1-031498

CR-Form-v7
<b>CHANGE REQUEST</b>
⌘ <b>TS 34.123-1 CR 632</b> ⌘ rev <b>-</b> ⌘ Current version: <b>5.5.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections to 34.123-1 v5.5.0 Package 4 test case 8.2.1.26		
<b>Source:</b>	⌘ Panasonic		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 16/10/03
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ In the current TC, the checking is performed after C.3 is called and C.3 releases the RRC connection and hence checking of the ciphering operation cannot be performed after that.
<b>Summary of change:</b>	⌘ Step 4 should appear before step 3 so that the checking of the ciphering on the new radio bearers can then be performed. Hence step 5 is added to call function C.3 and step 3 has been voided.
<b>Consequences if not approved:</b>	⌘ This test case could fail good UE.

<b>Clauses affected:</b>	⌘ 8.2.1.26										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	
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<input type="checkbox"/>	<input checked="" type="checkbox"/>										
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<b>Other comments:</b>	⌘ Affects R'99, Rel-4 and Rel-5 UEs.										

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 8.2.1.26 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_DCH: Success (with ciphering on)

### 8.2.1.26.1 Definition

### 8.2.1.26.2 Conformance requirement

If the UE receives:

- a RADIO BEARER SETUP message; or

it shall:

- 1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:
  - 2> perform the physical layer synchronisation procedure A as specified in TS 25.214 (FDD only);
- 1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

- 1> enter a state according to TS 25.331 subclause 8.6.3.3.

If the UE was in CELL\_DCH state upon reception of the reconfiguration message and remains in CELL\_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> if the IE "Downlink information for each radio link" is absent, not change its current DL Physical channel configuration.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

- 1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

...

If the IE "RAB information for setup" is included, the procedure is used to establish radio bearers belonging to a radio access bearer, and the UE shall:

- 1> if the radio access bearer identified with the IE "RAB info" does not exist in the variable ESTABLISHED\_RABS:
  - 2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" and at least one transparent mode radio bearer is included in the IE "RB information to setup"; or
  - 2> if at least one RLC-AM or RLC-UM radio bearer is included in the IE "RB information to setup":
    - 3> calculate the START value only once during this procedure (the same START value shall be used on all new radio bearers created for this radio access bearer) according to subclause 8.5.9 for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" part of the IE "RAB information to setup";



3> store the calculated START value in the variable START\_VALUE\_TO\_TRANSMIT.

1> for each radio bearer in the IE "RB information to setup":

2> if the radio bearer identified with the IE "RB identity" does not exist in the variable ESTABLISHED\_RABS:

3> perform the actions specified in subclause 8.6.4.3;

...

If the IE "RB information to setup" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

1> use the same START value to initialise the hyper frame number components of COUNT-C variables for all the new radio bearers to setup;

1> if the IE "RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and

1> if the IE "Uplink RLC mode" and the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "TM RLC":

2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS and at least one transparent mode radio bearer is included in the IE "RB information to setup":

3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":

4> at the activation time as specified in the IE "Activation Time" in the RADIO BEARER SETUP message:

5> initialise the 20 most significant bits of the HFN component of COUNT-C common for all transparent mode RLC radio bearer to the value of the latest transmitted START for this CN domain, while not incrementing the value of the HFN component of COUNT-C at each CFN cycle; and

5> set the remaining LSB of the HFN component of COUNT-C to zero;

5> start to perform ciphering on the radio bearer in lower layers while not incrementing the HFN.

4> at the activation time as specified in the IE "Ciphering activation time for DPCH" if included in the IE "Ciphering mode info" in the command message or, if this IE is not included, as specified in the IE "COUNT-C activation time" included in the response message:

5> initialise the 20 most significant bits of the HFN component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value in the variable START\_VALUE\_TO\_TRANSMIT;

5> set the remaining LSB of the HFN component of COUNT-C to zero;

5> start incrementing the COUNT-C value common for all transparent mode radio bearers of this CN domain as normal, at each CFN value, i.e. the HFN component is no longer fixed in value but incremented at each CFN cycle.

1> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":

2> start to perform ciphering on the radio bearer in lower layers, using the value of the IE "RB identity" minus one as the value of BEARER in the ciphering algorithm.

## Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4, 8.6.4.2, 8.6.4.3.

8.2.1.26.3 Test purpose

To confirm that the UE establishes a new radio bearer according to a RADIO BEARER SETUP message, and that ciphering is applied onto this new radio bearer

8.2.1.26.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CS-DCCH\_DCH (state 6-5) or PS\_DCCH\_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE is in CELL\_DCH state, after the test operator is prompted to make an out-going call. Before step 1, only signalling radio bearers have been established. The SS transmits a RADIO BEARER SETUP message to the UE . This message requests the establishment of radio access bearer. After the UE receives this message, it configures them and establishes a radio access bearer. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
				The UE is in CELL_DCH state.
1		←	RADIO BEARER SETUP	
2		→	RADIO BEARER SETUP COMPLETE	
3		↔	<del>CALL C.3</del> Void	<del>If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.</del>
4		↔	E.g. . "speech" RLC-TM PDU's	Check that the ciphering is working.
5		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP COMPLETE (Step 2)

The contents of RADIO BEARER SETUP COMPLETE message in this test case is identical to the message sub-type indicated by "Non speech from CELL\_DCH to CELL\_DCH in CS" or "Speech from CELL\_DCH to CELL\_DCH in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
START	Current START value for applicable CN domain. The first/ leftmost bit of the bit string contains the most significant bit of the START.

8.2.1.26.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

3GPP TSG T1 Meeting #21  
 Budapest, Hungary, 3<sup>rd</sup> – 7<sup>th</sup> November 2003

Tdoc # T1-031499

CR-Form-v7
<b>CHANGE REQUEST</b>
⌘ <b>TS 34.123-1 CR 633</b> ⌘ rev <b>-</b> ⌘ Current version: <b>5.5.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections to 34.123-1 v5.5.0 Package 4 test case 9.5.7.1		
<b>Source:</b>	⌘ Panasonic		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 21/10/03
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)	<b>2</b> (GSM Phase 2)	
	<b>A</b> (corresponds to a correction in an earlier release)	<b>R96</b> (Release 1996)	
	<b>B</b> (addition of feature),	<b>R97</b> (Release 1997)	
	<b>C</b> (functional modification of feature)	<b>R98</b> (Release 1998)	
	<b>D</b> (editorial modification)	<b>R99</b> (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<b>Rel-4</b> (Release 4)
			<b>Rel-5</b> (Release 5)
			<b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ When UE has entered the state MM IDLE substrate NO IMSI, UE shall not have any valid IMSI, therefore if SS is expecting UE to include IMSI in step 25, the UE would fail the test.
<b>Summary of change:</b>	⌘ In step 25 of the expected sequence, the expect mobile identity in the CM Service Request message is changed to 'IMEI'.
<b>Consequences if not approved:</b>	⌘ This test case could fail good UE.

<b>Clauses affected:</b>	⌘ 9.5.7.1						
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	
Y	N						
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	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘			
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘			
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>Other comments:</b>	⌘ Affects R'99, Rel-4 and Rel-5 UEs.						

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 9.5.7.1 MM connection / abortion by the network / cause #6

### 9.5.7.1.1 Definition

### 9.5.7.1.2 Conformance requirement

At the receipt of the ABORT message the mobile station shall abort any MM connection establishment or call re-establishment procedure and release all MM connections (if any). If cause value #6 is received the mobile station shall delete any TMSI, LAI and ciphering key sequence number stored in the SIM, set the update status to ROAMING NOT ALLOWED (and store it in the SIM according to clause 4.1.2.2) and consider the SIM invalid until switch off or the SIM is removed. As a consequence the mobile station enters state MM IDLE, substate NO IMSI after the release of the RR connection.

The mobile station shall then wait for the network to release the RR connection - see clause 4.5.3.1.

### Reference(s)

TS 24.008 clause 4.3.5.2.

### 9.5.7.1.3 Test purpose

To check that upon reception of an ABORT message with cause #6 during call establishment:

- the UE does not send any layer 3 message;
- after reception of an ABORT message and after having been deactivated and reactivated, the UE performs location updating using its IMSI as mobile identity and indicates deleted LAI and CKSN;
- the UE does not perform location updating, does not answer to paging with TMSI, rejects any request for mobile originating call except emergency call, does not perform IMSI detach;
- the UE accepts a request for emergency call.

### 9.5.7.1.4 Method of test

#### Initial Conditions

- System Simulator:
  - 2 cells, default parameters.
- User Equipment:
  - the UE has a valid TMSI, CKSN and CK, IK. It is "idle updated" on cell B.

#### Related ICS/IXIT Statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of speech Yes/No.

#### Test procedure

A mobile originating CM connection is attempted. Upon reception of the AUTHENTICATION RESPONSE message, the SS sends an ABORT message with cause #6. The SS waits for 5 s. The UE shall not send any layer 3 message. The SS releases the RRC connection.

The SS checks that the UE has entered the state MM IDLE substate NO IMSI, i.e. does not perform normal location updating, does not perform periodic updating, does not respond to paging, rejects any requests from CM entities except emergency calls and does not perform IMSI detach if deactivated.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell B				
1	UE			A mobile originating CM connection is attempted.
2			Void	
3			Void	
4			Void	
5	→		CM SERVICE REQUEST	CKSN = initial value, Mobile identity = TMSI
6	←		AUTHENTICATION REQUEST	
7	→		AUTHENTICATION RESPONSE	"reject cause" = #6.
8	←		ABORT	
9	SS			The SS waits for 5 s.
10	UE			The UE shall not send any layer 3 message during that time.
11	SS			SS releases the RRC connection.
12			Void	
The following messages are sent and shall be received on cell A.				
13	SS			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note)
14	UE			The UE performs cell reselection according to procedure as specified in (this however is not checked until step 27). The UE shall not initiate an RRC connection establishment on cell A or on cell B.
15	SS			The SS waits at least 7 minutes for a possible periodic updating.
16	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B.
17	←		PAGING TYPE 1	"UE identity" IE contains TMSI. Paging Cause: Terminating Conversational Call.
18	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is verified during 3 s.
19	UE			A MO CM connection is attempted.
20	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
21	UE			If the UE supports speech (see ICS), an emergency call is attempted.
22	SS			SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to: "Emergency call".
23			Void	
24			Void	
25	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment. CKSN = No key is available, Mobile identity = IMSI
26	←		CM SERVICE ACCEPT	
27	→		EMERGENCY SETUP	
28	←		RELEASE COMPLETE	"Cause" = unassigned number.
29	SS			SS releases the RRC connection.
30			Void	
31	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
32	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
33	UE			Depending on what has been performed in step 31 the UE is brought back to operation.
34	SS			SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to: "Registration".

Step	Direction		Message	Comments
	UE	SS		
35			Void	
36			Void	
37	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "Mobile Identity" = IMSI, "LAI" = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE).
38	←		AUTHENTICATION REQUEST	"CKSN" = CKSN1.
39	→		AUTHENTICATION RESPONSE	
39a		SS		The SS starts integrity protection
40	←		LOCATION UPDATING ACCEPT	"Mobile Identity" = TMSI.
41	→		TMSI REALLOCATION COMPLETE	
42		SS		SS releases the RRC connection.
43			Void	
NOTE: The definitions for "Serving cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 9.5.7.1.5 Test requirement

- 1) At step 10 the UE shall not send any layer 3 message.
- 2)
  - 2.1 At step 14 the UE shall not initiate an RRC connection establishment (not perform normal location updating).
  - 2.2 At step 16 the UE shall not initiate an RRC connection establishment.(not perform periodic location updating).
  - 2.3 At step 18 the UE shall not initiate an RRC connection establishment (not respond to paging with TMSI).
  - 2.4 At step 20 the UE shall not initiate an RRC connection establishment (reject any request for Mobile Originating call establishment).
  - 2.5 At step 32 the UE shall not initiate an RRC connection establishment.(not perform IMSI detach).
- 3) At step 22 the UE shall initiate RRC connection establishment with the establishment cause set to "emergency call".
- 4) At step 37 the UE send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type set to "deleted LAI".

3GPP TSG T1 Meeting #21  
 Budapest, Hungary, 3<sup>rd</sup> – 7<sup>th</sup> November 2003

Tdoc # T1-031500

CR-Form-v7
<h2 style="margin: 0;">CHANGE REQUEST</h2>
⌘ <b>TS 34.123-1 CR 634</b> ⌘ rev <b>-</b> ⌘ Current version: <b>5.5.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections to 34.123-1 v5.5.0 low priority test cases 8.2.3.26		
<b>Source:</b>	⌘ Panasonic		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 21/10/03
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
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		<b>Rel-5</b> (Release 5)	
		<b>Rel-6</b> (Release 6)	

<b>Reason for change:</b>	⌘ The test purpose of this test case is to check the behaviour of the UE when it transits from CELL_FACH to CELL_PCH. However, the initial conditions are set to CELL_DCH.
<b>Summary of change:</b>	⌘ Change the initial condition to PS-DCCH+DTCH_FACH (state 6-11).
<b>Consequences if not approved:</b>	⌘ This test case could fail good UE.

<b>Clauses affected:</b>	⌘ 8.2.3.26						
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	
Y	N						
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<input type="checkbox"/>	<input checked="" type="checkbox"/>						
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<b>Other comments:</b>	⌘ Affects R'99, Rel-4 and Rel-5 UEs.						

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

### 8.2.3.26 Radio Bearer Release for transition from CELL\_FACH to CELL\_PCH (Frequency band modification): Success

#### 8.2.3.26.1 Definition

#### 8.2.3.26.2 Conformance requirement

If the UE receives:

-a RADIO BEARER RELEASE message;

it shall:

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

1> enter a state according to TS25.331 subclause 8.6.3.3.

In case the procedure was triggered by reception of a RADIO BEARER RELEASE message, the UE shall:

1> transmit a RADIO BEARER RELEASE COMPLETE on the uplink DCCH using AM RLC, using the old configuration before the state transition.

If after state transition the UE enters CELL\_PCH state, the UE shall, after the state transition and transmission of the response message:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to TS25.304 on that frequency.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to TS25.304.

1> prohibit periodical status transmission in RLC;

1> remove any C-RNTI from MAC;

1> clear the variable C\_RNTI;

1> select Secondary CCPCH according to TS25.331 subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in TS25.331 subclause 8.6.3.2.

1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:

2> keep the configuration existing before the reception of the message and transmit a failure response message as specified in TS25.331 subclause 8.2.2.9

1> if the UE enters CELL\_PCH state from CELL\_FACH state, and the received reconfiguration message included the IE "Primary CPICH info" , and the UE selected another cell than indicated by this IE:

2> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "cell reselection";

2> when the cell update procedure is successfully completed:

3> the procedure ends.

#### Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

## 8.2.3.26.3 Test purpose

1. To confirm that the UE transmits a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC.
2. To confirm that the UE transits from CELL\_FACH to CELL\_PCH according to the RADIO BEARER RELEASE message.
3. To confirm that the UE releases radio access bearer and selects a common physical channel in a different frequency.

## 8.2.3.26.4 Method of test

## Initial Condition

System Simulator: 2 cells – Cell 1 is active and cell 6 is inactive

UE: ~~PS-DCCH+DTCH\_FACH (state 6-11)~~ ~~PS-DCCH+DTCH\_DCH (state 6-10)~~ or ~~CS-DCCH+DTCH\_DCH (state 6-9)~~ or ~~PS+CS-DCCH+DTCH\_DCH (state 6-14)~~ as specified in clause 7.4 of TS 34.108, ~~depending on the CN domain(s) supported by the UE.~~

## Test Procedure

Table 8.2.3.26

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-55	-72	Off	-55

Table 8.2.3.26 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 6.

The UE is in cell 1. The SS shall transmit a RADIO BEARER RELEASE message on downlink DCCH using UM RLC, . The UE shall transmit a RADIO BEARER RELEASE COMPLETE message using AM RLC. The SS shall acknowledge the RADIO BEARER RELEASE COMPLETE message and then switches its downlink transmission power settings to columns "T1". . Upon completion of the procedure, the SS waits for 5 seconds and calls for generic procedure C.4 in cell 6 to check that UE is in CELL\_PCH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	
3			Void	
4			Void	
5			Void	
6		←	RADIO BEARER RELEASE	This message is sent on RB 1. IE "Frequency info" and IE "Primary CPICH info" set to that of cell 6.
7		→	RADIO BEARER RELEASE COMPLETE	After SS acknowledges this message, SS switches its downlink transmission power settings to columns "T1" in table 8.2.3.26.
8				The SS waits for 5 s.
9		↔	CALL C.4	(In cell 6) If the test result of C.4 indicates that UE is in CELL_PCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RELEASE (Step 6)

Use the same message sub-type titled "Packet to CELL\_FACH from CELL\_FACH in PS" in [9] TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
Frequency info	FDD
- CHOICE mode	Not present
- UARFCN uplink (Nu)	Set to the frequency of cell 6
- UARFCN downlink (Nd)	
Downlink information for each radio link	
- Primary CPICH Info	
- Primary scrambling code	Set to same code as used for cell 6

8.2.3.26.5 Test requirement

After step 6 the UE shall transmits a RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC in cell 1.

After step 8 the UE shall be in CELL\_PCH state in cell 6.

3GPP TSG T1 Meeting #21  
 Budapest, Hungary, 3<sup>rd</sup> – 7<sup>th</sup> November 2003

Tdoc # T1-031502

CR-Form-v7
<b>CHANGE REQUEST</b>
⌘ <b>TS 34.123-1 CR 636</b> ⌘ rev <b>-</b> ⌘ Current version: <b>5.5.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections to 34.123-1 v5.5.0 low priority test cases 8.3.1.29 and 8.3.1.30		
<b>Source:</b>	⌘ Panasonic		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 10/10/03
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘	1. Currently, the value of T314 and T315 in the SIB type 1 are set to 10 and 40 seconds respectively. These values are not defined in the core specifications. 2. In 8.3.1.30, only physical channel information is included in the Cell Update Confirm message in step 4. Therefore, the UE should reply with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message. 3. Errors in the text found in test procedure.
<b>Summary of change:</b>	⌘	1. The value of T314 and T315 in the SIB type 1 have been revised to 12 and 30 respectively. As a result the timing requirement in the note under the test procedure were also revised accordingly. 2. In step 5 of 8.3.1.30, the UE shall respond with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message instead of TRANSPORT CHANNEL RECONFIGURATION COMPLETE message. 3. In the 'Note' paragraphs, 'it' is changed to 'SS'.
<b>Consequences if not approved:</b>	⌘	These test case could not be created in TTCN.

<b>Clauses affected:</b>	⌘	8.3.1.29 and 8.3.1.30								
<b>Other specs affected:</b>	⌘	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;">X</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;">X</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;">X</td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N		X		X		X
Y	N									
	X									
	X									
	X									

**Other comments:** ☞ Affects R'99, Rel-4 and Rel-5 UEs.

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☞ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

**<Start of Modification>****8.3.1.29 Cell Update: Radio Link Failure (T314>0, T315>0), CS RAB****8.3.1.29.1 Definition****8.3.1.29.2 Conformance requirement**

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

...

1> Paging response:

...

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL\_DCH state; and

2> if the criteria for radio link failure is met as specified in TS 25.331 subclause 8.5.6:

3> perform cell update using the cause "radio link failure".

...

When initiating the cell update procedure, the UE shall:

...

1> if the UE is in CELL\_DCH state:

2> in the variable RB\_TIMER\_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;

...

2> if the stored value of the timer T314 is greater than zero:

3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT314":

4> start timer T314.

3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315":

4> start timer T314.

2> if the stored value of the timer T315 is greater than zero:

3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT315":

4> start timer T315.

...

Upon expiry of timer T314 the UE shall:

1> if timer T302 is running:

...

1> if timer T302 is not running and timer T315 is running:

2> set IE "T314 expired" in variable RB\_TIMER\_INDICATOR to TRUE;

2> release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT314";

2> indicate release of those radio access bearers to upper layers;

2> delete all information about those radio access bearers from the variable ESTABLISHED\_RABS.

1> if timers T302 and T315 are not running:

2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;

2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;

2> clear the variable PDCP\_SN\_INFO;

2> clear the entry for the CELL\_UPDATE\_CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;

2> release all its radio resources;

2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;

2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;

2> clear the variable ESTABLISHED\_RABS;

2> set the variable CELL\_UPDATE\_STARTED to FALSE;

2> enter idle mode;

2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;

2> and the procedure ends.

Upon expiry of timer T315 the UE shall:

1> if timer T302 is running:

...

1> if timer T302 is not running and timer T314 is running:

2> set IE "T315 expired" in variable RB\_TIMER\_INDICATOR to TRUE;

2> release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "use T315";

2> indicate release of those radio access bearers to upper layers;

2> delete all information about those radio access bearers from the variable ESTABLISHED\_RABS.

1> if timers T302 and T314 are not running:

2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;

2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;



- 2> clear the variable PDCP\_SN\_INFO;
- 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
- 2> release all its radio resources;
- 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
- 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
- 2> clear the variable ESTABLISHED\_RABS;
- 2> set the variable CELL\_UPDATE\_STARTED to FALSE;
- 2> enter idle mode;
- 2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
- 2> and the procedure ends.

## Reference

3GPP TS 25.331 clause 8.3.1

### 8.3.1.29.3 Test purpose

1. To confirm that the UE shall indicate to the non-access stratum the release of radio access bearer which is associated with T315 and try to find a new cell after detecting that a radio link failure has occurred.
2. To confirm that the UE shall indicate to the non-access stratum the release of radio access bearer which is associated with T314 and try to find a new cell after detecting that a radio link failure has occurred.
3. To confirm that the UE enters idle mode after T314 expires and T302 and T315 are not running.
4. To confirm that the UE enters idle mode after T315 expires and T302 and T314 are not running.

### 8.3.1.29.4 Method of test

#### Initial Condition

System Simulator: 1 cell (Cell 1 is active).

UE: CS\_DCCH+DTCH\_DCH (state 6-9).

#### Specific Message Content

For SIB type 1 message to be transmitted throughout the test, use the message titled "System Information Block type 1 (supported PLMN type is GSM-MAP)" as found in TS 34.108 clause 6, with the following exception.

Information Element	Value/remark
- T314	<del>4012</del>
- T315	<del>4030</del>

Test Procedure

Table 8.3.1.29

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF
P-CCPCH RSCP (TDD)	dBm	-60	OFF

The UE is brought to CELL\_DCH state after making a successful outgoing call attempt. After the call has been established, SS configures its downlink transmission power settings according to column 'T1' in table 8.3.1.29. The UE shall detect a radio link failure in cell 1.

The SS shall wait for 12s (see Note 1) and then configure its downlink transmission power settings according to column 'T0' in table 8.3.1.29. The UE shall release radio bearer associated with T314 and enter idle mode state. SS calls for generic procedure C.1 to check that UE is in Idle Mode state in cell 1.

NOTE 1: Considering the timer tolerance of the UE, T314 may expire between ~~10s~~12s±0.25s3s, therefore the SS must wait for at least ~~10~~12.25s-3s before it reconfigures it downlink transmission power. Since SS has a timer tolerance of 10% or 2\*TTI+55ms (consider the greater value of the two), the test case shall set the SS to reconfigure the power level ~~12s~~13.67s after the ~~#~~SS configures the power settings according to column 'T1' in table 8.3.1.29.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures cell 1 according to column 'T1' in table 8.3.1.29.
2				SS waits for 12s after the completion of step 1 and then configures cell 1 according to column 'T0' in table 8.3.1.29.
3		↔	CALL C.1	SS execute this procedure in cell 1. If the test result of C.1 indicates that UE is in Idle Mode state, the test passes. Otherwise it fails.

Specific Message Contents

None.

8.3.1.29.5 Test requirement

After step 2, the UE shall detect the presence of cell 1 and enter idle mode state in cell 1.

8.3.1.30 Cell Update: Radio Link Failure (T314>0, T315>0), PS RAB

8.3.1.30.1 Definition

## 8.3.1.30.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

...

1> Paging response:

...

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL\_DCH state; and

2> if the criteria for radio link failure is met as specified in TS 25.331 subclause 8.5.6:

3> perform cell update using the cause "radio link failure".

...

When initiating the cell update procedure, the UE shall:

...

1> if the UE is in CELL\_DCH state:

2> in the variable RB\_TIMER\_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;

...

2> if the stored value of the timer T314 is greater than zero:

3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT314":

4> start timer T314.

3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315":

4> start timer T314.

2> if the stored value of the timer T315 is greater than zero:

3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT315":

4> start timer T315.

...

Upon expiry of timer T314 the UE shall:

1> if timer T302 is running:

...

1> if timer T302 is not running and timer T315 is running:

2> set IE "T314 expired" in variable RB\_TIMER\_INDICATOR to TRUE;

2> release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT314";

- 2> indicate release of those radio access bearers to upper layers;
  - 2> delete all information about those radio access bearers from the variable ESTABLISHED\_RABS.
- 1> if timers T302 and T315 are not running:
- 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;
  - 2> clear the variable PDCP\_SN\_INFO;
  - 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
  - 2> release all its radio resources;
  - 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
  - 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
  - 2> clear the variable ESTABLISHED\_RABS;
  - 2> set the variable CELL\_UPDATE\_STARTED to FALSE;
  - 2> enter idle mode;
  - 2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
  - 2> and the procedure ends.

Upon expiry of timer T315 the UE shall:

- 1> if timer T302 is running:
- ...
- 1> if timer T302 is not running and timer T314 is running:
- 2> set IE "T315 expired" in variable RB\_TIMER\_INDICATOR to TRUE;
  - 2> release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "use T315";
  - 2> indicate release of those radio access bearers to upper layers;
  - 2> delete all information about those radio access bearers from the variable ESTABLISHED\_RABS.
- 1> if timers T302 and T314 are not running:
- 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;
  - 2> clear the variable PDCP\_SN\_INFO;
  - 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
  - 2> release all its radio resources;
  - 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;

- 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
- 2> clear the variable ESTABLISHED\_RABS;
- 2> set the variable CELL\_UPDATE\_STARTED to FALSE;
- 2> enter idle mode;
- 2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
- 2> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.30.3 Test purpose

1. To confirm that the UE shall indicate to the non-access stratum the release of radio access bearer which is associated with T315 and try to find a new cell after detecting that a radio link failure has occurred.
2. To confirm that the UE shall indicate to the non-access stratum the release of radio access bearer which is associated with T314 and try to find a new cell after detecting that a radio link failure has occurred.
3. To confirm that the UE enters idle mode after T314 expires and T302 and T315 are not running.
4. To confirm that the UE enters idle mode after T315 expires and T302 and T314 are not running.

8.3.1.30.4 Method of test

Initial Condition

System Simulator: 1 cell (Cell 1 is active).

UE: PS\_DCCH+DTCH\_DCH (state 6-10 or PS+CS-DCCH+DTCH\_DCH (state 6-14), if UE supports both CS and PS domains.

Specific Message Content

For SIB type 1 message to be transmitted throughout the test, use the message titled “System Information Block type 1 (supported PLMN type is GSM-MAP)” as found in TS 34.108 clause 6, with the following exception.

Information Element	Value/remark
- T314	<del>4012</del>
- T315	<del>4030</del>

Test Procedure

Table 8.3.1.30

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF
P-CCPCH RSCP (TDD)	dBm	-60	OFF

The UE is brought to CELL\_DCH state after making a successful outgoing call attempt. After the call has been established, SS configures its downlink transmission power settings according to column 'T1' in table 8.3.1.30. The UE shall detect a radio link failure in cell 1.

Case A (the initial condition of the UE is in state 6-10):

The SS shall wait for 46s (see Note 2) and then configure its downlink transmission power settings according to column 'T0' in table 8.3.1.30. The UE shall release radio bearer associated with T315 and enter idle mode state. SS calls for generic procedure C.1 to check that UE is in Idle Mode state in cell 1.

Case B (the initial condition of the UE is in state 6-14):

The SS shall wait for 12s (see Note 1) and then configure its downlink transmission power settings according to column 'T0' in table 8.3.1.30. The UE shall release radio bearer associated with T314 and attempt to re-select to cell 1. After that, it shall then enter CELL\_FACH state and transmit CELL\_UPDATE on the uplink CCCH to SS. The SS transmits CELL\_UPDATE\_CONFIRM message which includes dedicated ~~transport and~~ physical channel parameters on downlink DCCH. Then the UE shall transmit a ~~TRANSPORT PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~ message on the uplink DCCH. SS transmits COUNTER\_CHECK message to UE. UE shall transmit a COUNTER\_CHECK\_RESPONSE message back to SS. Then SS configures its downlink transmission power settings according to column 'T1' in table 8.3.1.30. The UE shall detect a radio link failure in cell 1. The SS shall wait for 46s (see Note 2) and then configure its downlink transmission power settings according to column 'T0' in table 8.3.1.30. The UE shall release radio bearer associated with T315 and enter idle mode state. SS calls for generic procedure C.1 to check that UE is in Idle Mode state in cell 1.

NOTE 1: Considering the timer tolerance of the UE, T314 may expire between ~~40s~~12s±0.25s~~3s~~, therefore the SS must wait for at least ~~40s~~12.25s~~3s~~ before it reconfigures its downlink transmission power. Since SS has a timer tolerance of 10% or  $2 \cdot TTI + 55\text{ms}$  (consider the greater value of the two), the test case shall set the SS to reconfigure the power level ~~42s~~13.67s after the ~~SS~~ configures the power settings according to column 'T1' in table 8.3.1.30.

NOTE 2: Considering the timer tolerance of the UE, T315 may expire between ~~40s~~30s±1s~~0.75s~~, therefore the SS must wait for at least ~~44s~~30.75s before it reconfigures its downlink transmission power. Since SS has a timer tolerance of 10% or  $2 \cdot TTI + 55\text{ms}$  (consider the greater value of the two), the test case shall set the SS to reconfigure the power level ~~46s~~34.17s after the ~~SS~~ configures the power settings according to column 'T1' in table 8.3.1.30.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures cell 1 according to column 'T1' in table 8.3.1.30.
2				For Case A, go to step 9. SS waits for 12s after the completion of step 1 and then configures cell 1 according to column 'T0' in table 8.3.1.30.
3		→	CELL UPDATE	UE shall select cell 1 and enter CELL_FACH state to transmit this message
4		←	CELL UPDATE CONFIRM	See message content.
5		→	TRANSPORT PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
6		←	COUNTER CHECK	SS sent the COUNT-C info for the RBs that were established in the initial condition.
7		→	COUNTER CHECK RESPONSE	
8				SS configures cell 1 according to column 'T1' in table 8.3.1.30.
9				SS waits for 46s after the completion of step 1 and then configures cell 1 according to column 'T0' in table 8.3.1.30.
10		↔	CALL C.1	SS execute this procedure in cell 1. If the test result of C.1 indicates that UE is in Idle Mode state, the test passes. Otherwise it fails.

Specific Message Contents

CELL UPDATE (Step 4)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to 'radio link failure'
RB timer indicator	
- T314 expired	TRUE
- T315 expired	FALSE

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.

## COUNTER CHECK (Step 7)

Information Element	Value/remark
Message Type	0
RRC transaction identifier	Calculated value
Integrity check info	
RB COUNT-C MSB information	
- RB identity	Set to the RB identity that was set up in the initial condition and support PS service.
- COUNT-C MSB uplink	Set to the value stored in the SS
- COUNT-C MSB downlink	Set to the value stored in the SS

## COUNTER CHECK RESPONSE (Step 8)

Information Element	Value/remark
Message Type	0
RRC transaction identifier	Not checked
Integrity check info	Not present
RB COUNT-C information	Not present

## 8.3.1.30.5 Test requirement

Case A:

After step 2, the UE shall detect the presence of cell 1 and enter idle mode state in cell 1.

Case B:

After step 2, the UE shall detect the presence of cell 1, perform cell re-selection and transmit a CELL UPDATE message.

After step 5, the UE shall transmit a **TRANSPORT**-**PHYSICAL** CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 7, the UE shall transmit a COUNTER CHECK RESPONSE message without including IE "RB COUNT-C information".

After step 10, the UE shall detect the presence of cell 1 and enter idle mode state in cell 1.

**<End of Modification>**



3GPP TSG T1 Meeting #21  
 Budapest, Hungary, 3<sup>rd</sup> – 7<sup>th</sup> November 2003

Tdoc # T1-031503

CR-Form-v7
<b>CHANGE REQUEST</b>
⌘ <b>TS 34.123-1 CR 637</b> ⌘ rev <b>-</b> ⌘ Current version: <b>5.5.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections to 34.123-1 v5.5.0 low priority test cases 8.3.1.26 and 8.3.1.28		
<b>Source:</b>	⌘ Panasonic		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 22/10/03
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ In 8.3.1.26 and 8.3.1.28, only physical channel information is included in the Cell Update Confirm message in step 4. Therefore, the UE should reply with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
<b>Summary of change:</b>	⌘ In step 5 of 8.3.1.26 and 8.3.1.28, the UE shall respond with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message instead of TRANSPORT CHANNEL RECONFIGURATION COMPLETE message.
<b>Consequences if not approved:</b>	⌘ This test case could fail good UE.

<b>Clauses affected:</b>	⌘ 8.3.1.26, 8.3.1.28										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px; text-align: center;">X</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px; text-align: center;">X</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px; text-align: center;">X</td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N		X		X		X		
Y	N										
	X										
	X										
	X										
<b>Other comments:</b>	⌘ Affects R'99, Rel-4 and Rel-5 UEs.										

**How to create CRs using this form:**

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- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

### 8.3.1.26 Cell Update: Radio Link Failure ( $T314 > 0$ , $T315 = 0$ ), PS RAB established

#### 8.3.1.26.1 Definition

#### 8.3.1.26.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

...

1> Paging response:

...

1> Radio link failure:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE is in CELL\_DCH state; and
- 2> if the criteria for radio link failure is met as specified in TS 25.331 subclause 8.5.6:
  - 3> perform cell update using the cause "radio link failure".

...

When initiating the cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL\_DCH state:

- 2> in the variable RB\_TIMER\_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;
- 2> if the stored values of the timer T314 and timer T315 are both equal to zero; or
- 2> if the stored value of the timer T314 is equal to zero and there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT315":

...

2> if the stored value of the timer T314 is equal to zero:

...

2> if the stored value of the timer T315 is equal to zero:

- 3> release all radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT315";
- 3> in the variable RB\_TIMER\_INDICATOR set the IE "T315 expired" to TRUE.

2> if the stored value of the timer T314 is greater than zero:

- 3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT314":

4> start timer T314.

- 3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315":

4> start timer T314.

2> if the stored value of the timer T315 is greater than zero:

...

2> for the released radio bearer(s):

3> delete the information about the radio bearer from the variable ESTABLISHED\_RABS;

3> when all radio bearers belonging to the same radio access bearer have been released:

4> indicate local end release of the radio access bearer to upper layers using the CN domain identity together with the RAB identity stored in the variable ESTABLISHED\_RABS;

4> delete all information about the radio access bearer from the variable ESTABLISHED\_RABS.

2> select a suitable UTRA cell according to TS 25.304;

2> set the variable ORDERED\_RECONFIGURATION to FALSE.

1> set the variables PROTOCOL\_ERROR\_INDICATOR, FAILURE\_INDICATOR, UNSUPPORTED\_CONFIGURATION and INVALID\_CONFIGURATION to FALSE;

1> set the variable CELL\_UPDATE\_STARTED to TRUE;

1> if the UE is not already in CELL\_FACH state:

2> move to CELL\_FACH state;

2> select PRACH according to s TS 25.331 ubclause 8.5.17;

2> select Secondary CCPCH according to s TS 25.331 ubclause 8.5.19;

2> use the transport format set given in system information as specified in TS 25.331 subclause 8.6.5.1.

1> if the UE performs cell re-selection:

2> clear the variable C\_RNTI; and

2> stop using that C\_RNTI just cleared from the variable C\_RNTI in MAC.

1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

1> in case of a cell update procedure:

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the CELL UPDATE message for transmission on the uplink CCCH.

1> set counter V302 to 1;

1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

...

If the received CELL UPDATE CONFIRM message would cause the UE to transit to CELL\_DCH state; and

1> in case of a received CELL UPDATE CONFIRM message:

2> if the UE failed to establish the physical channel(s) indicated in the received CELL UPDATE CONFIRM message

...

the UE shall:

1> if the variable ORDERED\_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:

- 2> set the variable ORDERED\_RECONFIGURATION to FALSE.
- 1> if V302 is equal to or smaller than N302:
  - 2> select a suitable UTRA cell according to TS 25.304;
  - 2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "Radio link failure";
  - 2> submit the CELL UPDATE message for transmission on the uplink CCCH;
  - 2> increment counter V302;
  - 2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.
- 1> if V302 is greater than N302:

...

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.26.3 Test purpose

1. To confirm that the UE shall indicate to the non-access stratum the release of radio access bearer which is associated with T315 and try to find a new cell after detecting that a radio link failure has occurred.

8.3.1.26.4 Method of test

Initial Condition

System Simulator: 2 cells (Cell 1 and cell 2 are active).

UE: PS\_DCCH+DTCH\_DCH (state 6-10) in cell 1 or PS+CS-DCCH+DTCH\_DCH (state 6-14) in cell 1, if UE supports both CS and PS domains.

Specific Message Content

For SIB type 1 message to be transmitted throughout the test, use the message titled "System Information Block type 1 (supported PLMN type is GSM-MAP)" as found in TS 34.108 clause 6, with the following exception.

Information Element	Value/remark
- T315	0

Test Procedure

Table 8.3.1.26

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	OFF	-75	-60

Table 8.3.1.26 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denote the initial conditions.

The UE is brought to CELL\_DCH state in a cell 1 after making a successful outgoing call attempt. After the call has been established, SS configures its downlink transmission power settings according to column "T1" in table 8.3.1.26. The UE shall detect a radio link failure in cell 1.

UE shall release of the radio bearer which is associated with T315, if the latter has been set up in the initial condition.

Then it shall attempt to re-select to cell 2. After that, it shall then enter CELL\_FACH state and transmit CELL UPDATE on the uplink CCCH to SS. The SS transmits CELL UPDATE CONFIRM message which includes dedicated ~~transport and~~ physical channel parameters on downlink DCCH. Then the UE shall transmit a ~~TRANSPORT~~ PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

SS transmits COUNTER CHECK message to UE. UE shall transmit a COUNTER CHECK RESPONSE message back to SS.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures cell 1 and 2 according to column "T1" in table 8.3.1.26. SS starts to listen to the uplink CCCH of cell 2.
2				The UE detects the radio link failure.
3		→	CELL UPDATE	The UE shall find a new cell 2 and the value "radio link failure" shall be set in IE "Cell update cause".
4		←	CELL UPDATE CONFIRM	Including dedicated physical channel parameters.
5		→	<del>TRANSPORT</del> <u>PHYSICAL</u> CHANNEL RECONFIGURATION COMPLETE	
6		←	COUNTER CHECK	SS sent the COUNT-C info for the RBs that were established in the initial condition.
7		→	COUNTER CHECK RESPONSE	

Specific Message Contents

CELL UPDATE (Step 3)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
-SRNC Identity	Check to see if set to value assigned in cell 1.
-S-RNTI	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to 'radio link failure'
RB timer indicator	
- T314 expired	FALSE
- T315 expired	TRUE

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

If the initial condition of the UE is in state 6-10, then

Information Element	Value/remark
RRC State indicator	CELL_DCH
CHOICE channel requirement	Same as the set defined in RRC CONNECTION SETUP message: UM (Transition to CELL_DCH) found in TS 34.108 clause 9.
Downlink information common for all radio links	Same as the set defined in RRC CONNECTION SETUP message: UM (Transition to CELL_DCH) found in TS 34.108 clause 9.
Downlink information per radio link list	Same as the set defined in RRC CONNECTION SETUP message: UM (Transition to CELL_DCH) found in TS 34.108 clause 9.

If the initial condition of the UE is in state 6-14, then

Information Element	Value/remark
RRC State indicator	CELL_DCH
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.

#### COUNTER CHECK (Step 6)

Information Element	Value/remark
Message Type RRC transaction identifier Integrity check info RB COUNT-C MSB information - RB identity  - COUNT-C MSB uplink - COUNT-C MSB downlink	0 Calculated value  Set to the RB identity that was release by the UE upon radio link failure Arbitrary COUNT-C MSB Arbitrary COUNT-C MSB

#### COUNTER CHECK RESPONSE (Step 7)

Information Element	Value/remark
Message Type RRC transaction identifier Integrity check info RB COUNT-C information - RB identity  - COUNT-C uplink  - COUNT-C downlink	0 Not checked  Check to see if set to the RB identity that was release by the UE upon radio link failure Check to see if COUNT-C MSB is set to arbitrary value given in step 13 and LSB is fill with '0' Check to see if COUNT-C MSB is set to arbitrary value given in step 13 and LSB is fill with '0'

#### 8.3.1.26.5 Test requirement

After step 2, the UE shall detect the presence of cell 2, perform cell re-selection and transmit a CELL UPDATE message.

After step 4, the UE shall transmit a **TRANSPORT PHYSICAL CHANNEL RECONFIGURATION COMPLETE** message on the uplink DCCH using AM RLC.

After step 6, the UE shall transmit a COUNTER CHECK RESPONSE message with the MSB part of the COUNT-C values set identical to COUNT-C MSB values in the COUNTER CHECK message in step 6.

### 8.3.1.28 Cell Update: Radio Link Failure (T314=0, T315>0), PS RAB

#### 8.3.1.28.1 Definition

#### 8.3.1.28.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

...

1> Paging response:

...

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and

2> if the UE is in CELL\_DCH state; and

2> if the criteria for radio link failure is met as specified in TS 25.331 subclause 8.5.6:

3> perform cell update using the cause "radio link failure".

...

When initiating the cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL\_DCH state:

2> in the variable RB\_TIMER\_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;

2> if the stored values of the timer T314 and timer T315 are both equal to zero; or

2> if the stored value of the timer T314 is equal to zero and there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT315":

...

2> if the stored value of the timer T314 is equal to zero:

3> release all radio bearers, associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT314";

3> in the variable RB\_TIMER\_INDICATOR set the IE "T314 expired" to TRUE.

...

2> if the stored value of the timer T315 is greater than zero:



- 3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT315":
  - 4> start timer T315.
- 2> for the released radio bearer(s):
  - 3> delete the information about the radio bearer from the variable ESTABLISHED\_RABS;
  - 3> when all radio bearers belonging to the same radio access bearer have been released:
    - 4> indicate local end release of the radio access bearer to upper layers using the CN domain identity together with the RAB identity stored in the variable ESTABLISHED\_RABS;
    - 4> delete all information about the radio access bearer from the variable ESTABLISHED\_RABS.
- 2> select a suitable UTRA cell according to TS 25.304;
- 2> set the variable ORDERED\_RECONFIGURATION to FALSE.

...

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.28.3 Test purpose

- 1. To confirm that the UE release radio access bearer which is associated with T314 and try to find a new cell after detecting that a radio link failure has occurred.

8.3.1.28.4 Method of test

Initial Condition

System Simulator: 2 cells (Cell 1 and Cell 2 are active).

UE: PS\_DCCH+DTCH\_DCH (state 6-10) in cell 1 or PS+CS-DCCH+DTCH\_DCH (state 6-14) in cell 1, if UE supports both CS and PS domains.

Specific Message Content

For SIB type 1 message to be transmitted throughout the test, use the message titled "System Information Block type 1 (supported PLMN type is GSM-MAP)" as found in TS 34.108 clause 6, with the following exception.

Information Element	Value/remark
- T314	0

Test Procedure

Table 8.3.1.28

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	OFF	-75	-60

Table 8.3.1.28 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked 'T0' denote the initial conditions.

The UE is brought to CELL\_DCH state in a cell 1 after making a successful outgoing call attempt. After the call has been established, SS configures its downlink transmission power settings according to column 'T1' in table 8.3.1.28. The UE shall detect a radio link failure in cell 1.

The UE shall attempt to re-select to cell 2. After that, it shall then enter CELL\_FACH state and transmit CELL UPDATE on the uplink CCCH to SS. The SS transmits CELL UPDATE CONFIRM message which includes dedicated ~~transport channel and~~ physical channel parameters on downlink DCCH. Then the UE shall transmit a PHYSICAL TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH. SS transmits COUNTER CHECK message to UE. UE shall transmit a COUNTER CHECK RESPONSE message back to SS.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures cell 1 and 2 according to column 'T1' in table 8.3.1.28. SS starts to listen to the uplink CCCH of cell 2.
2				The UE detects the radio link failure.
3		→	CELL UPDATE	The UE shall find a new cell 2 and the value "radio link failure" shall be set in IE "Cell update cause".
4		←	CELL UPDATE CONFIRM	See message content.
5		→	<u>PHYSICAL TRANSPORT</u> CHANNEL RECONFIGURATION COMPLETE	
6		←	COUNTER CHECK	SS sent the COUNT-C info for the RBs that were established in the initial condition.
7		→	COUNTER CHECK RESPONSE	

Specific Message Contents

CELL UPDATE (Step 3)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to 'radio link failure'
RB timer indicator	
- T314 expired	TRUE
- T315 expired	FALSE

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.

COUNTER CHECK (Step 7)

Information Element	Value/remark
Message Type	0
RRC transaction identifier	Calculated value
Integrity check info	
RB COUNT-C MSB information	
- RB identity	Set to the RB identity that was set up in the initial condition
- COUNT-C MSB uplink	Set to the value stored in the SS
- COUNT-C MSB downlink	Set to the value stored in the SS

COUNTER CHECK RESPONSE (Step 8)

Information Element	Value/remark
Message Type	0
RRC transaction identifier	Not checked
Integrity check info	Not present
RB COUNT-C information	

8.3.1.28.5 Test requirement

After step 2, the UE shall detect the presence of cell 2, perform cell re-selection and transmit a CELL UPDATE message.

After step 5, the UE shall transmit a ~~PHYSICAL TRANSPORT~~ CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 7, the UE shall transmit a COUNTER CHECK RESPONSE message without including IE “RB COUNT-C information”.

CR-Form-v7

## CHANGE REQUEST

⌘ **34.123-1 CR 640** ⌘ rev **-** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Editorial Correction to RRC test case 8.3.2.13		
<b>Source:</b>	⌘ Anritsu Limited		
<b>Work item code:</b>	⌘ MISTST1	<b>Date:</b>	⌘ 27/10/2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)		2 (GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)		R96 (Release 1996)
	<b>B</b> (addition of feature),		R97 (Release 1997)
	<b>C</b> (functional modification of feature)		R98 (Release 1998)
	<b>D</b> (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ During T1#20 it was agreed to remove the URA-Id value from the 'URA Update Confirm' message from test case 8.3.2.13 (T1-031210). The important changes were made in the 'Expected Sequence' chart and the specific message content.  The sentence describing first URA Update Confirm message sent by SS (step 6), however, still implies that URA-Id is sent. Hence this need correcting to avoid contradiction in different parts of the prose.
<b>Summary of change:</b>	⌘ Delete part of sentence that implies URA-Identity is sent.
<b>Consequences if not approved:</b>	⌘ Test prose for 8.3.2.13 will be confusing.

<b>Clauses affected:</b>	⌘ 8.3.2.13						
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<input checked="" type="checkbox"/>	Test specifications					
	<input checked="" type="checkbox"/>	O&M Specifications					
<b>Other comments:</b>	⌘						

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

### 8.3.2.13 URA Update: Change of URA due to HCS Cell Reselection

#### 8.3.2.13.1 Definition

#### 8.3.2.13.2 Conformance requirement

1. The quality level threshold criterion H for hierarchical cell structures is used to determine whether prioritised ranking according to hierarchical cell re-selection rules shall apply, and is defined by:

$$H_s = Q_{\text{meas},s} - Q_{\text{hcs}_s}$$

$$H_n = Q_{\text{meas},n} - Q_{\text{hcs}_n} - TO_n * L_n$$

...

2. The cell-ranking criterion R is defined by:

$$R_s = Q_{\text{meas},s} + Q_{\text{hyst}_s}$$

$$R_n = Q_{\text{meas},n} - Q_{\text{offset}_{s,n}} - TO_n * (1 - L_n)$$

where:

$$TO_n = \text{TEMP\_OFFSET}_n * W(\text{PENALTY\_TIME}_n - T_n)$$

$$L_n = 0 \quad \text{if } \text{HCS\_PRIO}_n = \text{HCS\_PRIO}_s$$

$$L_n = 1 \quad \text{if } \text{HCS\_PRIO}_n < \text{HCS\_PRIO}_s$$

$$W(x) = 0 \quad \text{for } x < 0$$

$$W(x) = 1 \quad \text{for } x \geq 0$$

$\text{TEMP\_OFFSET}_n$  applies an offset to the H and R criteria for the duration of  $\text{PENALTY\_TIME}_n$  after a timer  $T_n$  has started for that neighbouring cell.

The timer  $T_n$  is implemented for each neighbouring cell.  $T_n$  shall be started from zero when one of the following conditions becomes true:

- if  $\text{HCS\_PRIO}_n < \text{HCS\_PRIO}_s$  and

$$Q_{\text{meas},n} > Q_{\text{hcs}_n}$$

Or

- if  $\text{HCS\_PRIO}_n = \text{HCS\_PRIO}_s$  and

- for serving FDD and neighbour FDD cells if the quality measure for cell selection and reselection is set to CPICH RSCP in the serving cell, and:

$$Q_{\text{meas},n} > Q_{\text{meas},s} + Q_{\text{offset}1_{s,n}}$$

- for serving FDD and neighbour FDD cells if the quality measure for cell selection and reselection is set to CPICH Ec/No in the serving cell, and:

$$Q_{\text{meas},n} > Q_{\text{meas},s} + Q_{\text{offset}2_{s,n}}$$

- for all other serving and neighbour cells:

$$Q_{\text{meas},n} > Q_{\text{meas},s} + Q_{\text{offset}1_{s,n}}$$

$T_n$  for the associated neighbour cell shall be stopped as soon as any of the above conditions are no longer fulfilled. Any value calculated for  $TO_n$  is valid only if the associated timer  $T_n$  is still running else  $TO_n$  shall be set to zero.

At cell-reselection, a timer  $T_n$  is stopped only if the corresponding cell is not a neighbour cell of the new serving cell, or if the criteria given above for starting timer  $T_n$  for the corresponding cell is no longer fulfilled with the parameters of the new serving cell. On cell re-selection, timer  $T_n$  shall be continued to be run for the corresponding cells but the criteria given above shall be evaluated with parameters broadcast in the new serving cell if the corresponding cells are neighbours of the new serving cell.

...

3. The cell selection criterion S used for cell reselection is fulfilled when:

for FDD cells:	$S_{\text{rxlev}} > 0$ AND $S_{\text{qual}} > 0$
for TDD cells:	$S_{\text{rxlev}} > 0$
for GSM cells:	$S_{\text{rxlev}} > 0$

Where :

$S_{\text{qual}} = Q_{\text{qualmeas}} - Q_{\text{qualmin}}$
$S_{\text{rxlev}} = Q_{\text{rxlevmeas}} - Q_{\text{rxlevmin}} - P_{\text{compensation}}$

...

4. The UE shall perform ranking of all cells that fulfil the S criterion among

- all cells that have the highest HCS\_PRIO among those cells that fulfil the criterion  $H \geq 0$ . Note that this rule is not valid when UE high-mobility is detected.
- all cells, not considering HCS priority levels, if no cell fulfil the criterion  $H \geq 0$ . This case is also valid when it is indicated in system information that HCS is not used, that is when serving cell does not belong to a hierarchical cell structure.

The cells shall be ranked according to the R criteria.

The best ranked cell is the cell with the highest R value.

5. If an FDD cell is ranked as the best cell and the quality measure for cell selection and re-selection is set to CPICH RSCP, the UE shall perform cell re-selection to that FDD cell.

In all cases, the UE shall reselect the new cell, only if the following conditions are met:

- the new cell is better ranked than the serving cell during a time interval  $T_{\text{reselction}}$ .

- more than 1 second has elapsed since the UE camped on the current serving cell.

...

6. The *cell reselection* process in Connected Mode is the same as *cell reselection evaluation process* used for idle mode, described in subclause 5.2.6 of 25.304.

7. A UE in URA\_PCH state shall initiate the URA update procedure in the following cases:

1> URA reselection:

- 2> if the UE detects that the current URA assigned to the UE, stored in the variable URA\_IDENTITY, is not present in the list of URA identities in system information block type 2; or

...

- 3> perform URA update using the cause "change of URA".

## Reference

3GPP TS 25.304 clause 5.2.6.1.4

3GPP TS 25.304 clause 5.4.3

3GPP TS 25.331 clause 8.3.1

### 8.3.2.13.3 Test purpose

1. To confirm that the UE can read HCS related SIB information and act upon all HCS parameters in URA\_PCH state.
2. To confirm that the UE executes an URA update procedure after the successful change of URA due to HCS Cell Reselection in URA\_PCH state.
3. To confirm UE responds correctly when it re-selects to a new cell while waiting from URA UPDATE CONFIRM message from SS.

### 8.3.2.13.4 Method of test

#### Initial Condition

System Simulator: 3 cells - Cell 1 is active with URA-ID 1 and downlink transmission power shown in column marked "T0" in table 8.3.2.13-1. Cell2 with URA-ID 1 and Cell 3 with URA-ID 2 are switched off

UE: URA\_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE, with URA-ID 1 from the list of URA-ID in cell 1

#### Specific Message Content

For system information blocks 4 and 11 for Cell 1 (gives IE's which are different from defaults given in 34.108 sec 6.1) to be transmitted before idle update preamble.



## Contents of System Information Block type 4 (FDD)

Information Element	Value/remark
- Cell selection and re-selection info	FDD
- CHOICE mode	0 dB
- Sintersearch	35 dB
- SsearchHCS	This parameter is configurable
- RAT List	Not Present
- S <sub>limit,SearchRAT</sub>	-20 dB
- Qqualmin	-115 dBm
- Qrxlevmin	10 (gives actual value of 20 dB)
- Qhyst1s	0 dB
- Qhyst2s	
- HCS Serving cell information	
-HCS Priority	6
- Q HCS	39 (results in actual value of -76)
- TcrMax	Not Present

## Contents of System Information Block type 4 (3.84 Mcps TDD and 1.28 Mcps TDD)

Information Element	Value/remark
- Cell selection and re-selection info	TDD
- CHOICE mode	47 dB
- SsearchHCS	10 (gives actual value of 20 dB)
- Qhyst1s	
- HCS Serving cell information	
-HCS Priority	6
- Q HCS	39 (results in actual value of -76)
- TcrMax	Not Present

## Contents of System Information Block type 11 (FDD) (Cell 1)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell Selection and Re-selection info	
- Qoffset1 <sub>s,n</sub>	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	3
- Cell info	
- Cell Selection and Re-selection info	
- Qoffset1 <sub>s,n</sub>	-20dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm

## Contents of System Information Block type 11 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 1)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- Qoffset1 <sub>s,n</sub>	-20 dB
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- Qoffset1 <sub>s,n</sub>	-20dB
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm

## Test Procedure

Table 8.3.2.13-1

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
Cell id in system information		1			2			3		
UTRA RF Channel Number		Ch. 1			Ch. 1			Ch. 1		
HCS Priority		6			7			7		
CPICH Ec (FDD)	dBm /3.84 MHz	-60	-60	-60	-80	-80	-70	-80	-70	-73
H* (During penalty time)		16	16	6	-14	-14	6	-14	-4	3
H* (After PenaltyTime)		16	16	16	-4	-4	6	-4	6	3
P-CCPCH RSCP (TDD)	dBm	-61	-61	-61	-80	-80	-67	-80	-73	-73
H* (After PenaltyTime)		15	15	15	-4	-4	9	-4	3	3
R* (After PenaltyTime)		-41	-41	-41	-60	-60	-47	-60	-53	-53

\* this parameter is calculated internally in the UE and is only shown for clarification of the test procedure.

The UE is in the URA\_PCH state and assigned with only 1 URA identity in cell 1: URA-ID 1. SS configures Cell 2 and 3 with power level given in column "T0", and URA-Id 1 and 2 respectively and starts broadcast of BCCH on the primary CCPCH in cells 2 and 3. UE shall remain camped on the Cell 1 even after expiry of penalty time i.e. 40 seconds. SS sets downlink transmission power settings according to columns "T1" in table 8.3.2.13-1. SS then adjusts the transmission power again according to 'T1' column. This is expected to cause the UE to perform a cell reselection to cell 3 after at-least 40 Seconds (Penalty Time) after the power levels have been changed. UE on performing cell reselection to cell 3 finds that its current URA-ID 1 is not in the new broadcasted list of URA-IDs, it moves to CELL\_FACH state and transmits a URA UPDATE message on the uplink CCCH. After the SS receives this message, it transmits URA UPDATE CONFIRM message ~~which includes the IEs "RRC State Indicator" and "URA-ID"~~ to the UE on the downlink CCCH. The "RRC State Indicator" is set to "URA\_PCH". UE returns to URA\_PCH state in cell 3 without sending a uplink response message. Next SS adjusts the transmission power according to 'T2' column. UE shall re-select to cell 2, and transmit URA UPDATE message to SS. However, SS do not acknowledge but adjusts the transmission power according to 'T0' column. UE shall perform cell re-selection to cell 1 and then sent URA UPDATE message to SS. Finally SS shall transmit URA UPDATE CONFIRM message to UE on the downlink CCCH. UE shall return to URA\_PCH state in Cell 1 and will not transmit anything on PRACH.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is updated with only 1 URA identity carried currently by cell 1. The starting state of the UE is URA_PCH
2		←	BCCH	SS configures cell 2 (with URA-ID 1) and Cell 3 (with URA-ID 2) and power levels as given in column T0 of table 8.3.2.13-1 and starts transmission of BCCH.
3				UE shall Remain camped on Cell 1 and in URA_PCH state even after expiry of Penalty time.
4				SS set the power transmission of all cells according to column 'T1' of table 8.3.2.13-1.
5		→	URA UPDATE	The UE shall perform a cell reselection first after the penalty time to cell 3 and when it finds that its current URA-ID 1 is not in the new broadcasted list of URA-IDs, it shall then transmit this message and set value "change of URA" into IE "URA update cause".
6		←	URA UPDATE CONFIRM	Message sent on CCCH.
7				SS set the power transmission of all cells according to column 'T2' of table 8.3.2.13-1.
8		→	URA UPDATE	In Cell 2
9				SS do not respond to the URA UPDATE message from UE and set the power transmission of all cells according to column 'T0' of table 8.3.2.13-1.
10		→	URA UPDATE	In Cell 1
11		←	URA UPDATE CONFIRM	Message sent on CCCH.

## Specific Message Contents

The contents of system information block 4 and 11 messages are identical as system information block 4 and 11 messages as found in 34.108 clause 6.1 with the following exceptions:

## Contents of System Information Block type 4 (FDD) (Cell 2 and 3)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	FDD
- Sintersearch	0 dB
- SsearchHCS	35 dB
- RAT List	This parameter is configurable
- S <sub>limit,SearchRAT</sub>	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Qhyst2s	0 dB
- HCS Serving cell information	
-HCS Priority	7
- Q HCS	39 (results in actual value of -76)
- TcrMax	Not Present

## Contents of System Information Block type 4 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 2 and 3)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	TDD
- SsearchHCS	47 dB
- Qhyst1s	10 (gives actual value of 20 dB)
- HCS Serving cell information	
-HCS Priority	7
- Q HCS	39 (results in actual value of -76)
- TcrMax	Not Present

## Contents of System Information Block type 11 (FDD) (Cell 2)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell Selection and Re-selection info	
- Qoffset1 <sub>s,n</sub>	-20dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	3
- Cell info	
- Cell Selection and Re-selection info	
- Qoffset1 <sub>s,n</sub>	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm

## Contents of System Information Block type 11 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 2)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- Qoffset1 <sub>s,n</sub>	-20 dB
- HCS neighbouring cell information	Present
- HCS_Priority	6
- Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- Qoffset1 <sub>s,n</sub>	-20dB
- HCS neighbouring cell information	Present
- HCS_Priority	7
- Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm



## Contents of System Information Block type 11 (FDD) (Cell 3)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell Selection and Re-selection info	
- Qoffset <sub>1s,n</sub>	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	1
- Cell info	
- Cell Selection and Re-selection info	
- Qoffset <sub>1s,n</sub>	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm

## Contents of System Information Block type 11 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 3)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- Qoffset1 <sub>s,n</sub>	-20 dB
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- Qoffset1 <sub>s,n</sub>	-20dB
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm

## URA UPDATE (Step 5, 8 and 10)

Information Element	Value/remark
URA Update Cause	Check to see if set to 'change of URA'

## URA UPDATE CONFIRM (Steps 6 and 11)

Use the same message sub-type found in TS 34.108 clause 9.

## 8.3.2.13.5 Test requirement

After step 4 the UE shall find that URA-ID 2 is not in its maintained list of URA-IDs. After cell reselection, the UE shall move to CELL\_FACH state and transmit URA UPDATE message setting value "change of URA" into IE "URA update cause".

After step 7 the UE shall find that URA-ID 1 is not in its maintained list of URA-IDs. After cell reselection, the UE shall move to CELL\_FACH state and transmit URA UPDATE message setting value "change of URA" into IE "URA update cause".

CR-Form-v7

## CHANGE REQUEST

№ **34.123-1 CR 644** № rev **-** № Current version: **5.5.0** №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	№ Correction to clause 8.1.2.1 to match TTCN		
<b>Source:</b>	№ Racal Instruments Wireless Solutions		
<b>Work item code:</b>	№ TEI	<b>Date:</b>	№ 28/10/2003
<b>Category:</b>	№ <b>F</b>	<b>Release:</b>	№ REL-5, REL-4 & R99
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)	<b>2</b> (GSM Phase 2)	
	<b>A</b> (corresponds to a correction in an earlier release)	<b>R96</b> (Release 1996)	
	<b>B</b> (addition of feature),	<b>R97</b> (Release 1997)	
	<b>C</b> (functional modification of feature)	<b>R98</b> (Release 1998)	
	<b>D</b> (editorial modification)	<b>R99</b> (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<b>Rel-4</b> (Release 4)
			<b>Rel-5</b> (Release 5)
			<b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	№ Inconsistency with TTCN		
<b>Summary of change:</b>	№ Prose for TC 8.1.2.1 is modified for consistency with TTCN.		
<b>Consequences if not approved:</b>	№ Inconsistency between TTCN and prose.		

<b>Clauses affected:</b>	№ 8.1.2.1								
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td>X</td> <td>X</td> </tr> <tr> <td>X</td> <td>X</td> </tr> </table>	Y	N	X	X	X	X	Other core specifications Test specifications O&M Specifications	№ TS 34.123-1
Y	N								
X	X								
X	X								
<b>Other comments:</b>	№ Affects REL-5, REL-4 and R99.								

### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked № contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 8.1.2.1.4 Method of test

## Initial Condition

System Simulator: 1 cell.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

## Test Procedure

The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by attempting to make an outgoing call. After SS receives this message, it assigns the necessary radio resources and U-RNTI to be used by the UE. SS then transmits an RRC CONNECTION SETUP message containing an IE "Initial UE Identity" that does not match the IE "Initial UE Identity" in the most recent RRC CONNECTION REQUEST message sent by the UE. UE receives the RRC CONNECTION SETUP message before timer T300 expires but discards it due to a IE "Initial UE Identity" mismatch. UE shall wait for timer T300 to time out before re-transmitting a RRC CONNECTION REQUEST message to the SS. SS again assigns the necessary radio resources and U-RNTI. SS then transmits a RRC CONNECTION SETUP message containing an IE "Initial UE Identity" that matches the IE "Initial UE Identity" in the most recent RRC CONNECTION REQUEST sent by the UE. SS then waits for the UE to transmit an RRC CONNECTION SETUP COMPLETE message on the DCCH. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		→	RRC CONNECTION REQUEST	By outgoing call operation. See specific message contents.
2		←	RRC CONNECTION SETUP	This message is not addressed to the UE. See specific message contents.
3		→	RRC CONNECTION REQUEST	UE shall re-transmit the request message again after a time out of T300 from step 1.
3a				SS checks IE "UE Specific Behaviour Information 1 idle" is not included in received RRC CONNECTION REQUEST message.
4		←	RRC CONNECTION SETUP	See specific message contents.
5				The UE configures the layer 2 and layer 1.
6		→	RRC CONNECTION SETUP COMPLETE	See specific message contents.
7		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

## Specific Message Content

## System Information Block type 11 (FDD)

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Intra-frequency reporting quantity for RACH Reporting	
- SFN-SFN observed time difference reporting indicator	No report
- CHOICE <i>mode</i>	
- FDD	
- Reporting quantity	CPICH Ec/N0
- Maximum number of reported cells on RACH	current cell

## System Information Block type 11 (TDD)

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Intra-frequency reporting quantity for RACH Reporting	
- SFN-SFN observed time difference reporting indicator	No report
- CHOICE <i>mode</i>	TDD
- Reporting quantity list	
- Reporting quantity	P-CCPCH RSCP
- Maximum number of reported cells on RACH	current cell

## RRC CONNECTION REQUEST (Step 1) (FDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
UE Specific Behaviour Information 1 idle	Check if this IE is absent.
Measured results on RACH	Check to see if set in accordance with the IE "Intra-frequency reporting quantity for RACH Reporting" included in SYSTEM INFORMATION BLOCK Type 11
- Measurement result for current cell	
- CHOICE <i>mode</i>	
- FDD	
- CHOICE measurement quantity	
- CPICH Ec/N0	The actual reported value is not checked

## RRC CONNECTION REQUEST (Step 1) (TDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Measured results on RACH	Check to see if set in accordance with the IE "Intra-frequency reporting quantity for RACH Reporting" included in SYSTEM INFORMATION BLOCK Type 11
- Measurement result for current cell	
- CHOICE <i>mode</i>	TDD
- CHOICE measurement quantity	
- P-CCPCH RSCP	The actual reported value is not checked

## RRC CONNECTION SETUP (Step 2)

Use the same message type found in clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
Initial UE Identity	Set to <del>the same type as in the RRC CONNECTION REQUEST message but with a different value</del> <a href="#">unmatched identity (incorrect IMSI)</a>

## RRC CONNECTION SETUP (Step 4)

Use the default message with the same message type and covering the scenario used in this test (Transition to CELL\_DCH) specified in clause 9 of TS 34.108.

## RRC CONNECTION SETUP COMPLETE (Step 6)

Use the default message with the same message type specified in clause 9 of TS 34.108 with the following exception.

Information Element	Value/remark
UE Radio Access Capability	Checked to see if compatible with the stated capability in PIXIT/PICS statements.
UE radio access capability extension	Checked to see if compatible with the stated capability in PIXIT/PICS statements.
UE system specific Capability	Checked to see if compatible with the stated capability in PIXIT/PICS statements.

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3GPP TSG T1 Meeting #21  
 Budapest, Hungary, 3<sup>rd</sup> – 7<sup>th</sup> November 2003

Tdoc # T1-031531

CR-Form-v7
<b>CHANGE REQUEST</b>
⌘ <b>TS 34.123-1 CR 647</b> ⌘ rev <b>-</b> ⌘ Current version: <b>5.5.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correction to 34.123-1 v5.5.0 TC 8.4.1.5 (Package 1)		
<b>Source:</b>	⌘ Panasonic		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 29/10/03
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ In CELL UPDATE message (step 11), IE "SFN-SFN observed time difference" shall be absent. Please see IE "SFN-SFN observed time difference reporting indicator" in SIB 12 (step 9).
<b>Summary of change:</b>	⌘ In CELL UPDATE message (step 11), IE "SFN-SFN observed time difference" is now set to "Check to see if it is absent".
<b>Consequences if not approved:</b>	⌘ IE value error remains.

<b>Clauses affected:</b>	⌘ 8.4.1.5										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<b>Other comments:</b>	⌘ Affects R'99, Rel-4 and Rel-5 UEs.										

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be



downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

**<Start of Modifications>****8.4.1.5 Measurement Control and Report: Intra-frequency measurement for transition from CELL\_DCH to CELL\_FACH state (FDD)****8.4.1.5.1 Definition****8.4.1.5.2 Conformance requirement**

Upon transition from CELL\_DCH to CELL\_FACH/CELL\_PCH/URA\_PCH state, the UE shall:

- 1> stop intra-frequency type measurement reporting;
- 1> if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE; or
- 1> if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or
- 1> if the transition is not due to a reconfiguration message:
  - 2> delete the measurements of type intra-frequency associated with the variable MEASUREMENT\_IDENTITY.
- 1> begin monitoring cells listed in the IE "intra-frequency cell info list" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331).

Upon transition from CELL\_FACH to CELL\_DCH state, the UE shall:

- 1> retrieve each set of measurement control information of measurement type "intra-frequency" stored in the variable MEASUREMENT\_IDENTITY;
- 1> if the IE "measurement validity" for a measurement has been assigned the value "CELL\_DCH":
  - 2> resume the measurement reporting.
- 1> if no intra-frequency measurements applicable to CELL\_DCH state are stored in the variable MEASUREMENT\_IDENTITY:
  - 2> continue monitoring the list of neighbouring cells assigned in the IE "intra-frequency cell info list" in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331);
  - 2> if the IE "intra-frequency measurement reporting criteria" was included in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331):
    - 3> send the MEASUREMENT REPORT message when reporting criteria in IE "Reporting information for state CELL\_DCH" are fulfilled.

**Reference**

3GPP TS 25.331, clause 8.4.1.6.1, 8.4.1.7.1

**8.4.1.5.3 Test Purpose**

1. To confirm that the UE stops performing intra-frequency measurement reporting specified in a MEASUREMENT CONTROL message, when it moves from CELL\_DCH state to CELL\_FACH state.
2. To confirm that the UE reads the System Information Block type 11 or 12 messages when it enters CELL\_FACH state from CELL\_DCH state, and starts to monitor the cells listed in the IE "intra-frequency cell info list".

- 3 To confirm that the UE performs measurements on uplink RACH transmissions and appends the measured results in RACH messages, when it receives IE "intra-frequency reporting quantity for RACH reporting" and IE "Maximum number of reported cells on RACH" in the System Information Block type 11 or 12 messages.
4. To confirm that the UE applies the reporting criteria in IE "intra-frequency reporting criteria" in System Information Block Type 11 or 12 messages following a state transition from CELL\_FACH to CELL\_DCH, if no intra-frequency measurements applicable to CELL\_DCH are stored.

8.4.1.5.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 and cell 2 are active, while cell 3 is switched off..

UE: PS-DCCH+DTCH\_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108.

Specific Message Contents

For system information block 11 of Cell 1 (gives IE's which are different from defaults given in 34.108 subclause 6.1) to be transmitted before idle update preamble.

System Information Block type 11

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not present
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present
- Cells for measurement	Not Present
-Intra-frequency measurement quantity	Not Present
-Intra-frequency reporting quantity for RACH reporting	Not Present
-Maximum number of reported cells on RACH	Not Present
-Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

Test Procedure

Table 8.4.1.5-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1" are to be applied subsequently. The exact instants on which these values shall be applied are described in the texts in this clause.

Table 8.4.1.5-1

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T0	T1	T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1		Ch. 1	
CPICH Ec	dBm/ 3.84 MHz	-60	-60	-75	-85	-122	-70

The UE is initially in CELL\_DCH state. The System Information Block type 11 message is modified compared to the default message contents, in order to prevent the reporting of "Cell synchronisation information". No measurement to be applied by the UE in CELL\_DCH state is specified in any of the System Information Block type 11 or 12 messages.

SS sends a MEASUREMENT CONTROL message to UE. In this message, the SS requests the establishment of an intra-frequency measurement for the measurement of cell 2's CPICH RSCP. At the same time, reporting of CPICH RSCP values of active set cells and monitored set cells are requested with the reporting criteria set to "periodic reporting" and "reporting interval" set to 16 seconds. The UE shall start transmitting MEASUREMENT REPORT messages at 16 seconds interval corresponding to the requested reporting event.

SS transmits PHYSICAL CHANNEL RECONFIGURATION message to move the UE to CELL\_FACH. After receiving this message, the UE shall reconfigure itself and reply with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on RACH. SS monitors the uplink channels to verify that no MEASUREMENT REPORT messages are received.

SS reconfigures itself according to the settings in columns marked "T1" in table 8.4.1.5-1. SS transmits System Information Block type 12 messages in cell 1, which include cell 3 into the IE "intra-frequency cell info list" and modifies SIB11 to indicate that SIB12 is now being broadcast. IEs "Intra-frequency reporting quantity for RACH Reporting" and IE "Maximum number of Reported cells on RACH" are also specified in the System Information Type 12 messages. Event type 1a reporting criterion is specified for intra-frequency measurements. SS transmit SYSTEM INFORMATION CHANGE INDICATION message to UE. SS waits until T305 has expired. The UE shall respond with a CELL UPDATE message, which comprises IE "Measured results on RACH" to report the readings of CPICH RSCP for cell 1 and cell 3. SS replies with CELL UPDATE CONFIRM message on the downlink DCCH. This message does not change the physical resources nor allocate any new RNTI identities. SS transmits PHYSICAL CHANNEL RECONFIGURATION message again, and configures dedicated physical channel for both uplink and downlink directions. The UE shall send PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and return to CELL\_DCH state. SS listens to the uplink DCCH for MEASUREMENT REPORT messages.

SS shall receive the MEASUREMENT REPORT messages at 500 milliseconds interval.

SS verifies that it includes CPICH RSCP values of the cells 1 and 3 in IE "Cell measured results" and the triggering of event '1a' on cell 3 in IE "Event results".

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

## Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is in PS-DCCH+DTCH_DCH (state 6-10) in cell 1.
2			Void	
3			Void	
4			Void	
5		←	MEASUREMENT CONTROL	SS requests for measurement of cell 2's CPICH RSCP value and reporting of CPICH RSCP values of active cells and monitored set cells.
6		→	MEASUREMENT REPORT	UE shall send periodic report at 16 seconds interval.
7		←	PHYSICAL CHANNEL RECONFIGURATION	SS moves the UE to CELL_FACH state.
8		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state.
9		←	Master Information Block System Information Block type 11, 12	SS reconfigures itself according to the settings stated in column "T1" of table 8.4.1.5-1. SIB 11 is modified to indicate that SIB12 is now broadcast and to add cell 2 as a neighbour cell. SIB 12 indicates that cell 3 is included in the IE "intra-frequency cell info list". SS waits for 1 minute and verifies that no MEASUREMENT REPORT messages are detected on the uplink.
10		←	SYSTEM INFORMATION CHANGE INDICATION	SS waits until T305 has expired.
11		→	CELL UPDATE	UE shall transmit this message with measured results on RACH channels for cell 1 and cell 3 present in this message.
12		←	CELL UPDATE CONFIRM	No changes in physical resource allocation and RNTI identities.
13		←	PHYSICAL CHANNEL RECONFIGURATION	SS configures dedicated physical channels.
14		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall transit to CELL_DCH state.
15		→	MEASUREMENT REPORT	Repeated at 500 milliseconds interval

## Specific Message Content

## MEASUREMENT CONTROL (Step 5)

Information Element	Value/remark
Measurement Identity	5
Measurement Command	Setup
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Periodical Reporting
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	Intra-frequency measurement
CHOICE measurement type	Remove no intra-frequency cells
- Intra-frequency cell info list	2
- CHOICE intra-frequency cell removal	0 dB
- New intra-frequency info list	Not Present
- Intra-frequency cell id	Not Present
- Cell info	FALSE
- Cell individual offset	FDD
- Reference time difference to cell	
- Read SFN Indicator	
- CHOICE mode	
- Primary CPICH Info	Set to same code as used for cell 2
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- TX Diversity Indicator	Not Present
- Cells for measurement	
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present (Default is 0)
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not present
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	16 seconds
DPCH compressed mode status info	Not Present

## MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
Measurement identity	Check to see if set to 5
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured result list	Check to see if this IE is absent
Event results	Check to see if this IE is absent

## PHYSICAL CHANNEL RECONFIGURATION (Step 7)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "(Packet to CELL\_FACH from CELL\_DCH in PS)"

## MASTER INFORMATION BLOCK (Step 9)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/Remarks
MIB Value Tag	2

## System Information Block type 11 (Step 9)

Information Element	Value/remark
SIB12 indicator	TRUE
FACH measurement occasion info	Not Present
Measurement control system information	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN Indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	
- Qoffset <sub>s,n</sub>	0 dB
- Maximum allowed UL TX power	0 dBm
- HCS neighbouring cell information	Not Present
- CHOICE Mode	FDD
- Qqualmin	-20dB
- Qrxlevmin	-115dBm
- Cells for measurement	Not Present
-Intra-frequency measurement quantity	Not Present
-Intra-frequency reporting quantity for RACH reporting	Not Present
-Maximum number of reported cells on RACH	Not Present
-Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present



System Information Block type 12 (Step 9)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	Not used
- Use of HCS	CPICH RSCP
- Cell selection and reselection quality measure	6
- Intra-frequency measurement system information	Not Present
- Intra-frequency measurement identity	3
- Intra-frequency cell cells	Not Present
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	Not Present
- Intra-frequency cell id	Not Present
- Cell info	Not Present
- Cell individual offset	Not Present
- Reference time difference to cell	TRUE
- Read SFN Indicator	FDD
- CHOICE mode	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH Info	Not Present
- Primary Scrambling Code	FALSE
- Primary CPICH TX power	0dB
- TX Diversity Indicator	0dBm
- Cell selection and Re-selection info	Not Present
- Qoffset <sub>s,n</sub>	Not Present
- Maximum allowed UL TX power	FDD
- HCS neighbouring cell information	-20dB, -115dBm
- CHOICE Mode	Not Present (Default is 0)
- Qqualmin, Qrxlevmin	CPICH RSCP
- Intra-frequency measurement quantity	No report
- Filter Coefficient	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity for RACH reporting	Current cell + best neighbour
- SFN-SFN observed time difference reporting indicator	FALSE
- CHOICE mode	FDD
- Reporting quantity	CPICH RSCP
- Maximum number of reported cells on RACH	Current cell + best neighbour
- Reporting information for state CELL_DCH	FALSE
- Intra-frequency reporting quantity	FALSE
- Reporting quantities for active set cells	FALSE
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	FALSE
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Measurement Reporting Mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Event trigger
- Periodic Reporting/Event Trigger Reporting Mode	Intra-frequency measurement reporting criteria
- CHOICE report criteria	1a
- Parameter required for each event	Not Present
- Intra-frequency event identity	Monitored set cells
- Triggering condition 1	14.5dB
- Triggering condition 2	Not present
- Reporting range constant	Not present
- Cells forbidden to affect reporting	Not present

- W	0.0
- Hysteresis	1.0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	7
- Replacement activation threshold	Not Present
- Time to trigger	60 ms
- Amount of reporting	Infinity
- Reporting Interval	500 milliseconds
- Reporting cell status	
- CHOICE <i>reported cell</i>	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Inter-frequency measurement system information	Not present
- Inter-RAT measurement system information	Not present
- Traffic volume measurement system information	Not present

SYSTEM INFORMATION CHANGE INDICATION (Step 10)

Information Element	Value/Remarks
BCCH modification info	
- MIB Value tag	2

CELL UPDATE (Step 11)

Information Element	Value/remark
U-RNTI	Check to see if set to the same value assigned during the execution of procedure P3 or P5.
START list	Checked to see if this IE is present
AM_RLC error indication(RB2, RB3 or RB4)	FALSE
AM_RLC error indication(RB>4)	FALSE
Cell update cause	Check to see if it is set to "Periodical cell update"
Failure case	Check to see if it is absent
Measured results on RACH	
- Measurement result for current cell	
- CHOICE measurement quantity	Check to see if set to "CPICH RSCP"
- CPICH RSCP	Check to see if it is present
- Measurement results for monitored cells	
- SFN-SFN observed time difference	<a href="#">Check to see if it is absent</a> <del>Not Checked</del>
- Primary CPICH info	
- Primary scrambling code	Check to see if the same as cell 3's code.
- CHOICE measurement quantity	Check to see if set to "CPICH RSCP"
- CPICH RSCP	Check to see if it is present

PHYSICAL CHANNEL RECONFIGURATION (Step 13)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "(Packet to CELL\_DCH from CELL\_FACH in PS)".

MEASUREMENT REPORT (Step 15)

Information Element	Value/remark
Measurement identity	Check to see if set to 6
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results list	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Event results	Check to see if this set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1a'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 3

8.4.1.5.5 Test Requirement

After step 5, the UE shall start to transmit MEASUREMENT REPORT messages at 16 seconds interval. The message shall contain IE "measured result" to report cell 2's CPICH RSCP value.

After step 8, the UE shall not send any MEASUREMENT REPORT messages containing reporting quantities requested in MEASUREMENT CONTROL messages in step 5.

After step 10, the UE shall perform a cell update procedure and transmit a CELL UPDATE message. In this message, measured values CPICH RSCP for cell 1 and cell 3 shall be included in the IE "measured results on RACH".

After step 14, the UE shall apply the intra-frequency measurement reporting criteria" received in System Information Block type 12 messages of step 9. It shall send MEASUREMENT REPORT messages at 500 milliseconds interval. In these messages, triggering of event '1a' shall be reported in IE "Event results" with IE "Primary CPICH info" containing the primary scrambling code for cell 3.

The message shall contain IE "measured result" to report CPICH RSCP values of cell 1 and 3.

**<End of Modifications>**

## CHANGE REQUEST

№ **34.123-1 CR 622** № rev **1** № Current version: **5.5.0** №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

**Proposed change affects:** UICC apps №  ME  Radio Access Network  Core Network

<b>Title:</b>	№ Corrections to RRC P1 test case 8.1.1.8		
<b>Source:</b>	№ Motorola		
<b>Work item code:</b>	№ TEI	<b>Date:</b>	№ 24/10/2003
<b>Category:</b>	№ <b>F</b>	<b>Release:</b>	№ Rel-5
	<i>Use <u>one</u> of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use <u>one</u> of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	№ In PAGING TYPE 2 message the network can as use IMSI or TMSI as paging record identifier. Paging using IMSI in PAGING TYPE 2 message is covered in test case 8.1.1.7. There is no test coverage for paging using TMSI in PAGING TYPE 2 message.  Test prose is not aligned with TTCN implementation in 34.123-3.
<b>Summary of change:</b>	№ In Specific Message Contents of PAGING TYPE 2, the "Paging record type identifier" is changed to "TMSI (GSM-MAP)/P-TMSI" and "TMSI (DS-41)" for GSM-MAP and ANSI-41 core network type respectively.
<b>Consequences if not approved:</b>	№ No test coverage for paging using TMSI in PAGING TYPE 2 message. Inconsistency between 34.123-3 (TTCN) and prose (34.123-1)

<b>Clauses affected:</b>	№ 8.1.1.8						
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	№	
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Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>Other comments:</b>	№ Affects R99, REL-4, REL-5.						

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- 1) Fill out the above form. The symbols above marked № contain pop-up help information about the field that they are closest to.

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 8.1.1.8 Paging for Connection in connected mode (CELL\_FACH)

### 8.1.1.8.1 Definition

### 8.1.1.8.2 Conformance requirement

When the UE receives a PAGING TYPE 2 message, it shall not affect the state of any other ongoing RRC procedures, when not stated otherwise elsewhere.

The UE shall:

- 1> indicate reception of paging; and
- 1> forward the IE "Paging cause" and the IE "Paging record type identifier" to upper layers.

...

In the UE, the initial direct transfer procedure shall be initiated, when the upper layers request establishment of a signalling connection. This request also includes a request for the transfer of a NAS message.

The UE shall, in the INITIAL DIRECT TRANSFER message:

...

In CELL\_FACH state, the UE shall:

- 1> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 12 (or "System Information Block Type 11" if "System Information Block Type 12" is not being broadcast);
- 1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported.

The UE shall:

- 1> transmit the INITIAL DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3;
- 1> when the INITIAL DIRECT TRANSFER message has been submitted to lower layers for transmission:
  - 2> confirm the establishment of a signalling connection to upper layers; and
  - 2> add the signalling connection with the identity indicated by the IE "CN domain identity" in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS.
- 1> when the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC:
  - 2> the procedure ends.

### Reference

3GPP TS 25.331 clause 8.1.8.2, 8.1.11.

### 8.1.1.8.3 Test purpose

To confirm that the UE responds to a PAGING TYPE 2 message, which includes a matching value for IE "Paging Record Type Identifier".

### 8.1.1.8.4 Method of test

### Initial Condition

System Simulator: 1 cell.

UE: CELL\_FACH state (state 6-11) as specified in clause 7.4 of TS 34.108. The UE has been registered in both CS and PS domains.

**Test Procedure**

The SS transmits a PAGING TYPE 2 message. Then the UE shall respond by transmitting an upper layer message to answer this page.

**Expected sequence**

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2		←	PAGING TYPE 2	The SS transmits the message includes a matched identifier.
3		→	INITIAL DIRECT TRANSFER	The UE responds by sending an upper layer message.

**Specific Message Content**

**PAGING TYPE 2 (Step 2)**

Use the same message type found in [9] (TS 34.108) Clause 9, with the following exception.

Information Element	Value/remark
Paging cause	Terminating Call supported by the UE
CN domain identity	CS
Paging record type identifier	Set to " <del>TMSI IMSI</del> -(GSM-MAP)/P-TMSI"-for UEs supporting GSM-MAP core network type or " <del>TMSI IMSI</del> (DS-41)" for UEs supporting ANSI-41 core network type.

**INITIAL DIRECT TRANSFER (Step 3) – for UEs supporting GSM-MAP core networks**

Only the message type IE for this message is checked.

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
CN domain identity	CS domain
Intra Domain NAS Node Selector	
- CHOICE version	R99
-- CHOICE CN type	GSM
--- CHOICE Routing basis	Local (P)TMSI
---- Routing parameter	The TMSI/P-TMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant. The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI. The first/ leftmost/ most significant bit of the bit string contains bit b23 of the TMSI/ PTMSI.
--- Entered parameter	FALSE
NAS message	Not checked
START	Not checked
Measured results on RACH	Not checked

INITIAL DIRECT TRANSFER (Step 3) – for UEs supporting ANSI-41 core networks

Information Element	Value/remark
Message Type Integrity check info - Message authentication code  - RRC Message sequence number  CN domain identity Intra Domain NAS Node Selector - CHOICE version NAS message START Measured results on RACH	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.  This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. CS domain  ANSI-41 : Bitstring(14), all bits set to 0 Not checked Not checked Not checked

8.1.1.8.5 Test requirement

After step 2 the UE shall respond to the PAGING TYPE 2 message by transmitting an INITIAL DIRECT TRANSFER message on the uplink DCCH.



## CHANGE REQUEST

№ **34.123-1 CR 642** № rev **1** № Current version: **5.5.0** №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

**Proposed change affects:** UICC apps №  ME  Radio Access Network  Core Network

<b>Title:</b>	№ Corrections to Low Priority GMM test case 12.4.3.3		
<b>Source:</b>	№ Motorola		
<b>Work item code:</b>	№ TEI	<b>Date:</b>	№ 27-10-2003
<b>Category:</b>	№ <b>F</b>	<b>Release:</b>	№ Rel-5
	<i>Use <u>one</u> of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="http://www.3gpp.org/Specs/tr21/900">TR 21.900</a> .		<i>Use <u>one</u> of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	№ As per 3GPP TS 24.008 section 4.7.5.2.1 "To initiate a combined Routing area updating.....Furthermore the MS SHALL INCLUDE the TMSI status IE if NO VALID TMSI is available." section 9.4.14.4 - TMSI status This IE shall be included if the MS performs a combined routing area update and no valid TMSI is available. Based on the above, while doing combined RAU, if the MS doesn't have valid TMSI, it should include this IE. Otherwise this IE is omitted.		
<b>Summary of change:</b>	№ In step 12 of the test sequence, 'TMSI status = valid TMSI available or IE is omitted' is changed to 'IE is omitted'.		
<b>Consequences if not approved:</b>	№ Test as specified is not conformant to the core specification		

<b>Clauses affected:</b>	№ 12.4.3.3										
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	№ 51.010-1 Test Case 44.2.3.3.3
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<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<b>Other comments:</b>	№ Affects R99, REL-4, REL-5.										

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### 12.4.3.3 Periodic routing area updating / no cell available / network mode I

12.4.3.3.1 Definition

12.4.3.3.2 Conformance requirement

If the UE is both IMSI attached for PS and non-PS services, and if the UE lost coverage of the registered PLMN and timer T3312 expires; if the UE returns to coverage in a cell that supports PS and the network is in network operation mode I, then the UE shall perform a combined routing area update procedure indicating 'combined RA/LA updating with IMSI attach'.

#### Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.1.

12.4.3.3.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.3.4 Method of test

#### Initial condition

##### System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).

Cell A is operating in network operation mode II and cell B is in network operation mode I.

##### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Idle updated on Cell A

#### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

#### Test procedure

The UE initiates a PS attach procedure. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledges the new P-TMSI by sending ATTACH COMPLETE message. PS radio contact is distorted before T3312 timeout. PS radio contact is established again (after T3312 timeout), and a routing area updating procedure is performed immediately.

T3312; set to 6 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2		SS		The UE is set in UE operation mode A (see ICS).
3		UE		The UE is powered up or switched on and initiates an attach (see ICS).
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
6		->	ATTACH COMPLETE	
7		SS		After 5 minutes, the signal strength is lowered until the UE has lost contact with the SS. Set the cell type of cell A to the "non-suitable cell".(see note)
8		SS		Wait 2 minutes.
9		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell B to the "Serving cell". (see note)
10		UE		Cell B is preferred by the UE.
11		UE		The UE immediately starts a combined RA updating procedure

12	->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach'  P-TMSI-2 signature  Routing area identity = RAI-1 TMSI status = <del>valid TMSI available or</del> IE is omitted.
13	<-	ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-3  P-TMSI-3 signature  Mobile identity = TMSI-2  Routing area identity = RAI-4
14	->	ROUTING AREA UPDATE COMPLETE	
15	UE		The UE is switched off or power is removed (see ICS).
16	->	DETACH REQUEST	Message not sent if power is removed.  Detach type = 'power switched off, combined PS / IMSI detach'
17	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

#### Specific message contents

None.

#### 12.4.3.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step12, when the UE is both IMSI attached for PS and non-PS service , and if the UE lost coverage of the reiterated PLMN and the timer T3312 expires, if the UE returns to coverage in a cell that supports PS and the network is in network oration mode I, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

3GPP TSG T1 Meeting #21  
 Budapest, Hungary, 3<sup>rd</sup> – 7<sup>th</sup> November 2003

Tdoc # T1-031582

CR-Form-v7
CHANGE REQUEST
⌘ <b>TS 34.123-1 CR 631</b> ⌘ rev <b>1</b> ⌘ Current version: <b>5.5.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections to 34.123-1 v5.5.0 Traffic volume measurement (Revision to T1-031497)		
<b>Source:</b>	⌘ Panasonic		
<b>Work item code:</b>	⌘ TEI <span style="float: right;"><b>Date:</b> ⌘ 4/11/03</span>		
<b>Category:</b>	⌘ <b>F</b> <span style="float: right;"><b>Release:</b> ⌘ Rel-5</span> Use <u>one</u> of the following categories: <table style="width: 100%; margin-top: 5px;"> <tr> <td style="width: 50%;"> <b>F</b> (correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (addition of feature),  <b>C</b> (functional modification of feature)  <b>D</b> (editorial modification)                 </td> <td style="width: 50%;">                     Use <u>one</u> of the following releases:                      2 (GSM Phase 2)                      R96 (Release 1996)                      R97 (Release 1997)                      R98 (Release 1998)                      R99 (Release 1999)                      Rel-4 (Release 4)                      Rel-5 (Release 5)                      Rel-6 (Release 6)                 </td> </tr> </table> Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .	<b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification)	Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)
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<b>Reason for change:</b>	⌘ In 25.331, the order in which the RBs are reported in the Measurement Report for traffic volume is not specified. Rev 1 In TC 8.4.1.30, only one RB is reported, therefore it is needless to mention about the checking of the order in which the RBs are reported.
<b>Summary of change:</b>	⌘ A note has been added to the specific message content of Measurement Report message to state that the order in which the RBs are reported in the Measurement Report message for traffic volume measurement is not checked. Rev 1 TC 8.4.1.30 has been removed from this CR.
<b>Consequences if not approved:</b>	⌘ These test cases could fail good UE.

<b>Clauses affected:</b>	⌘ 8.1.11, 8.2.1.3, 8.2.1.4, 8.2.1.7, 8.2.1.11, 8.2.1.12, 8.2.1.13, 8.2.2.2, 8.2.2.4, 8.2.3.11, 8.2.4.3, 8.2.6.2, 8.2.6.6, 8.2.6.11, 8.2.6.14, 8.3.4.5, 8.4.1.16, 8.4.1.17, 8.4.1.18, 8.4.1.19, 8.4.1.29					
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;">N</td> </tr> <tr> <td style="padding: 2px 5px;"><input type="checkbox"/></td> <td style="padding: 2px 5px;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘
Y	N					
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<input type="checkbox"/>	<input checked="" type="checkbox"/>					
<b>Other comments:</b>	⌘ Affects R'99, Rel-4 and Rel-5 UEs.					

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## 8.1.11 Signalling Connection Release (Invalid configuration)

### 8.1.11.1 Definition

### 8.1.11.2 Conformance requirement

Upon reception of a SIGNALLING CONNECTION RELEASE message, the UE shall:

- 1> indicate the release of the signalling connection and pass the value of the IE "CN domain identity" to upper layers;
- 1> remove the signalling connection with the identity indicated by the IE "CN domain identity" from the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
- 1> clear the entry for the SIGNALLING CONNECTION RELEASE message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> the procedure ends.

If radio access bearers for the CN domain indicated by the IE "CN domain identity" exist in the variable ESTABLISHED\_RABS, the UE shall:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to SIGNALLING CONNECTION RELEASE; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the SIGNALLING CONNECTION RELEASE message in the table "Accepted transactions" in the variable TRANSACTIONS and clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value "Message not compatible with receiver state";
- 1> when the RRC STATUS message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid SIGNALLING CONNECTION RELEASE message has not been received.

### Reference

3GPP TS 25.331 clause 8.1.13.3 and 8.1.13.5.

### 8.1.11.3 Test purpose

To confirm that the UE ignores the SIGNALLING CONNECTION RELEASE REQUEST message which request the UE to release signalling connection of domain that contains established radio access bearers.

To confirm that the UE transmit a RRC STATUS message to SS after detecting an invalid configuration in the received message.

### 8.1.11.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH\_DCH (state 6-9) or PS\_DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.



## Test Procedure

SS transmit MEASUREMENT CONTROL message to UE. In this message, SS requests UE to perform traffic volume measurement. Key measurement parameters are as follows: measurement quantity = "RLC Buffer Payload", report criteria = "periodic reporting criteria", reporting interval = "6 seconds", reporting amount = 'infinity'. UE shall begin traffic volume measurements, and shall send MEASUREMENT REPORT message after completing first measurement. UE shall send second MEASUREMENT REPORT message 6 seconds after first MEASUREMENT REPORT message. Then SS transmit SIGNALLING CONNECTION RELEASE message to UE. UE shall ignore the message and send a RRC STATUS message to SS. Then the UE shall send MEASUREMENT REPORT message to SS within the next 6 seconds.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MEASUREMENT CONTROL	Periodical traffic volume measurement reporting is requested.
2		→	MEASUREMENT REPORT	
3		→	MEASUREMENT REPORT	Time difference between earlier and this MEASUREMENT REPORT message should be 6 seconds.
4		←	SIGNALLING CONNECTION RELEASE	If the initial condition of the UE is state 6-9, set the IE "CN domain identity" to "CS domain". If the initial condition of the UE is state 6-10, set the IE "CN domain identity" to "PS domain".
5		→	RRC STATUS	
6		→	MEASUREMENT REPORT	This message should be sent within 6 seconds after the previous message.

## Specific Message Content

## MEASUREMENT CONTROL (Step 1)

For MEASUREMENT CONTROL message in step 1, use the message sub-type as found in clause 9 of TS 34.108, with the exception of the following Information Elements:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode
- Transfer Mode	Periodic
- Periodical or event trigger	Not Present
Additional measurement list	Traffic Volume Measurement
CHOICE measurement type	
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	Not Present
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	6 Sec
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 2, 3 and 6)

Check that the message received is the same as the message sub-type found in clause 9 of TS 34.108, with the following exceptions [and the order in which the RBs are reported is not checked.](#):

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

## SIGNALLING CONNECTION RELEASE (Step 4)

Information Element	Value/Remarks
Message Type RRC transaction identifier Integrity check info - Message authentication code  - RRC Message sequence number CN domain identity	0  SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. If the initial condition of the UE is state 6-9, set to "CS domain". If the initial condition of the UE is state 6-10, set to "PS domain".

## RRC STATUS (Step 5)

Information Element	Value/remark
Message Type Integrity check info - Message authentication code  - RRC Message sequence number  Identification of received message - Received message type - RRC transaction identifier Protocol error information - Protocol error cause	 This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. Not Checked SIGNALLING CONNECTION RELEASE 0  Message not compatible with receiver state

## 8.1.11.5 Test requirement

After step 1 the UE shall transmit MEASUREMENT REPORT message twice at an interval of 6 seconds.

After step 4 the UE shall transmit a RRC STATUS message with protocol error cause set to "Message not compatible with receiver state".

After step 5 the UE shall transmit a MEASUREMENT REPORT within 6 seconds.

## 8.2.1.3 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_DCH: Failure (Unsupported configuration)

## 8.2.1.3.1 Definition

## 8.2.1.3.2 Conformance requirement

If the UTRAN instructs the UE to use a configuration, which it does not support and/or if the received message causes the variable UNSUPPORTED\_CONFIGURATION to be set to TRUE, the UE shall:

- 1> transmit a failure response as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "configuration unsupported".

1> set the variable UNSUPPORTED\_CONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The UE shall:

1> in case of reception of a RADIO BEARER SETUP message:

...

2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

...

The UE should set the variable UNSUPPORTED\_CONFIGURATION to TRUE if the received message is not according to the UE capabilities.

## Reference

3GPP TS 25.331 clause 8.2.2.6, 8.2.2.9, 8.5.20.

### 8.2.1.3.3 Test purpose

To confirm that the UE keeps its configuration and transmits a RADIO BEARER SETUP FAILURE message in case of receiving a RADIO BEARER SETUP message which includes parameters of its unsupported configuration.

### 8.2.1.3.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH\_DCH (state 6-5) or PS\_DCCH\_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the domain(s) supported by the UE.

#### Test Procedure

The UE is in CELL\_DCH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER SETUP message in which the frequency cannot be supported by the UE. After the UE receives this message, it transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC. UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

#### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER SETUP	Including the unsupported configuration for the UE.
2		→	RADIO BEARER SETUP FAILURE	The UE does not change the configuration.
3		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 3)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked.](#):

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

## RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is indicated as "Non-speech in CS" as found in Annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108 with the following exceptions:

## RADIO BEARER SETUP (FDD)

Information Element	Value/remark
Frequency info	
CHOICE mode	FDD
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

## RADIO BEARER SETUP (TDD)

Information Element	Value/remark
Frequency info	
CHOICE mode	TDD
- UARFCN (Nt)	0

## RADIO BEARER SETUP FAILURE (Step 2)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Message Type	
Failure cause	Not checked

## 8.2.1.3.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

After step 1 the UE transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC .

After step 2, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

## 8.2.1.4 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_DCH: Failure (Physical channel Failure and successful reversion to old configuration)

## 8.2.1.4.1 Definition

## 8.2.1.4.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset.

If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel establishment failure".

NOTE: The criteria defined in this subclause only apply in case the UE performs synchronisation procedure A (FDD only).

...

If the received message caused the UE to be in CELL\_DCH state and the UE according to subclause 8.5.4 failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

1> revert to the configuration prior to the reception of the message (old configuration);

...

1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "failure cause" to "physical channel failure".

1> set the variable ORDERED\_RECONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The UE shall:

1> in case of reception of a RADIO BEARER SETUP message:

...

2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

## Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.5.4.

### 8.2.1.4.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, if the UE fails to reconfigure the radio bearer according to the RADIO BEARER SETUP message before timer T312 expires.

### 8.2.1.4.4 Method of test

#### Initial Condition

System Simulator: 2 cells. – Cell 1 is active and cell 2 is inactive.

UE: CS-DCCH\_DCH (state 6-5) or PS-DCCH\_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the domain(s) supported by the UE.

Test Procedure

**Table 8.2.1.4**

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84 MHz	-60	-60	OFF	-75
P-CCPCH RSCP (TDD)	dBm	-60	-60	OFF	-75

Table 8.2.1.4 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL\_DCH state in cell 1. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. Then the SS configures its downlink transmission power settings according to column "T1" in table 8.2.1.4. The SS transmits a RADIO BEARER SETUP message to the UE specifying a configuration in cell 2 and SS keeps its old dedicated channel configuration in cell 1. Then after T312 expiry, the UE reverts to the old configuration and transmits a RADIO BEARER SETUP FAILURE message on the DCCH in cell 1 using AM RLC which is set to "physical channel failure" in IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER SETUP	The SS keeps its old L1 configuration in cell 1 and does not configure a physical channel in cell 2 after transmitting this message.
2				The UE does not configure the new radio access bearer and reverts to the old configuration.
3		→	RADIO BEARER SETUP FAILURE	UE shall transmit this message using the old configuration.
4		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:



Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 4)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked](#):

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

RADIO BEARER SETUP (Step 1) (FDD)

The contents of the RADIO BEARER SETUP message in this test case is indicated as "Non speech to CELL\_DCH from CELL\_DCH in CS", "Speech to CELL\_DCH from CELL\_DCH in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in clause 9 of TS 34.108, with the following exceptions.

Information Element	Value/remark
Downlink information for each radio link list - Downlink information for each radio links - CHOICE mode - Primary CPICH info - Primary CPICH scrambling code	FDD  Ref. to the Default setting for cell 2 in TS34.108 clause 6.1 (FDD)

#### RADIO BEARER SETUP (Step 1) (TDD)

The contents of the RADIO BEARER SETUP message in this test case is indicated as "Non speech to CELL\_DCH from CELL\_DCH in CS", "Speech to CELL\_DCH from CELL\_DCH in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Downlink information for each radio link list - Downlink information for each radio links - CHOICE mode - Primary CCPCH info	TDD  Ref. to the Default setting for cell 2 in TS34.108 clause 6.1 (TDD)

#### RADIO BEARER SETUP FAILURE (Step 3)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

#### 8.2.1.4.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

After step 2 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

After step 3, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

#### 8.2.1.7 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_DCH: Failure (Invalid message reception and Invalid configuration)

##### 8.2.1.7.1 Definition

##### 8.2.1.7.2 Conformance requirement

If the received reconfiguration message contains a protocol error causing the variable `PROTOCOL_ERROR_REJECT` to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
- 2> include the IE "RRC transaction identifier"; and
- 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Rejected transactions" in the variable `TRANSACTIONS`; and

- 2> clear that entry;
- 2> set the IE "failure cause" to the cause value "protocol error";
- 2> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION.

....

If the variable INVALID\_CONFIGURATION is set to TRUE the UE shall:

- 1> keep the configuration existing before the reception of the message;
- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
    - 3> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
    - 3> clear that entry.
  - 2> set the IE "failure cause" to "invalid configuration".
- 1> set the variable INVALID\_CONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

....

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, containing an undefined critical message extension, the UE shall:

- 1> set the variable PROTOCOL\_ERROR\_REJECT to TRUE;
- 1> set the IE "Protocol error cause" in the variable PROTOCOL\_ERROR\_INFORMATION to "Message extension not comprehended";
- 1> if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:
  - 2> store the IE "Message type" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS; and
  - 2> set the IE "RRC transaction identifier" to zero in that table entry.
- 1> perform procedure specific error handling according to TS 25.331 clause 8.

....

If the IE "RAB information for setup" is included, the procedure is used to establish radio bearers belonging to a radio access bearer, and the UE shall:

- 1> if several IEs "RAB information for setup" are included and the included IEs "CN domain identity" in the IE "RAB info" does not all have the same value:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.

....

The UE shall:

- 1> in case of reception of a RADIO BEARER SETUP message:
  - ...
  - 2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

## Reference

3GPP TS 25.331 clause 8.2.2.13, 8.2.2.11, 8.2.2.9, 8.6.4.2 and 9.3b.

## 8.2.1.7.3 Test purpose

To confirm that the UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC if it receives an invalid RADIO BEARER SETUP message which contains an unexpected critical message extension.

To confirm that the UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC if it receives a RADIO BEARER SETUP message including an invalid configuration.

## 8.2.1.7.4 Method of test

## Initial Condition

System Simulator: 1 cell

UE: CS-DCCH\_DCH (state 6-5) or PS-DCCH\_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

## Test Procedure

The UE is in CELL\_DCH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits an invalid RADIO BEARER SETUP message to the UE which contains an unexpected critical message extension. The UE keeps the old configuration and transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "protocol error" in IE "failure cause", and is set to "Message extension not comprehended" in IE "Protocol error cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically. The UE keeps current configuration after SS transmits a RADIO BEARER SETUP message including an invalid configuration. Then UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER SETUP	See specific message content.
2		→	RADIO BEARER SETUP FAILURE	The UE does not change its configuration.
2a		→	MEASUREMENT REPORT	
3		←	RADIO BEARER SETUP	This message includes an invalid value.
4		→	RADIO BEARER SETUP FAILURE	The UE does not change its configuration.
5		→	MEASUREMENT REPORT	

## Specific Message Contents

## MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b, 2a and 5)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked](#):

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

RADIO BEARER SETUP (Step 1)

Use the RADIO BEARER SETUP message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Critical extensions	'01'H

## RADIO BEARER SETUP FAILURE (Step 2)

Information Element	Value/remark
Message Type	
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	Message extension not comprehended
Other information element	Not checked

## RADIO BEARER SETUP (Step 3)

The contents of RADIO BEARER SETUP message in this test case is identical as "Non speech from CELL\_DCH to CELL\_DCH in CS", Speech to CELL\_DCH from CELL\_DCH in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in clause 9 of TS 34.108 with the following exceptions:

## RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RAB information for setup list	
- RAB information for setup	This IE is set as defined in message "RADIO BEARER SETUP message: AM or UM (Speech in CS)"
- RAB information for setup	This IE is set as defined in message "RADIO BEARER SETUP message: AM or UM (Packet to CELL_DCH from CELL_DCH in PS)"

## RADIO BEARER SETUP FAILURE (Step 4)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

## 8.2.1.7.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

After step 1 the UE shall keep its old configuration and transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "protocol error" in IE "failure cause" and set to "Message extension not comprehended" in IE "Protocol error cause".

After step 2, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

After step 3 the UE shall keep its old configuration and transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".

After step 4, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

### 8.2.1.11 Radio Bearer Establishment for transition from CELL\_FACH to CELL\_DCH: Failure (Unsupported configuration)

#### 8.2.1.11.1 Definition

#### 8.2.1.11.2 Conformance requirement

If the UTRAN instructs the UE to use a configuration, which it does not support and/or if the received message causes the variable UNSUPPORTED\_CONFIGURATION to be set to TRUE, the UE shall:

- 1> transmit a failure response as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "configuration unsupported".
- 1> set the variable UNSUPPORTED\_CONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The UE shall:

- 1> in case of reception of a RADIO BEARER SETUP message:
  - ...
  - 2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

...

The UE should set the variable UNSUPPORTED\_CONFIGURATION to TRUE if the received message is not according to the UE capabilities.

#### Reference

3GPP TS 25.331 clause 8.2.2.6, 8.2.2.9, 8.5.20.

#### 8.2.1.11.3 Test purpose

To confirm that the UE keeps its configuration and transmits a RADIO BEARER SETUP FAILURE message in case of it receiving a RADIO BEARER SETUP message, which includes parameters of an unsupported configuration.

#### 8.2.1.11.4 Method of test

##### Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH\_FACH (state 6-8) as specified in clause 7.4 of TS 34.108.

##### Test Procedure

The UE is in CELL\_FACH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT

message back to SS. The SS transmits a RADIO BEARER SETUP message with a stated frequency that cannot be supported by the UE. After the UE receives this message, it shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC . UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER SETUP	This message includes an unsupported configuration for the UE.
2		→	RADIO BEARER SETUP FAILURE	The UE shall transmit this message using RLC-AM mode and do not change the current configuration.
3		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 3)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked:](#)



Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

#### RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is indicated as "Packet to CELL\_DCH from CELL\_FACH in PS" as found in [9] TS 34.108 Clause 9 with the following exceptions:

#### RADIO BEARER SETUP (FDD)

Information Element	Value/remark
Frequency info	
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

#### RADIO BEARER SETUP (TDD)

Information Element	Value/remark
Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	0

#### RADIO BEARER SETUP FAILURE (Step 2)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in [9] TS 34.108 Clause 9, with the following exceptions:

Information Element	Value/remark
Message Type	
Failure cause	Not checked

#### 8.2.1.11.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

After step 1 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM .

After step 2, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

### 8.2.1.12 Radio Bearer Establishment for transition from CELL\_FACH to CELL\_DCH: Failure (Physical channel Failure and successful reversion to old configuration)

#### 8.2.1.12.1 Definition

#### 8.2.1.12.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset.

If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel establishment failure".

....

If the received message caused the UE to be in CELL\_DCH state and the UE failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

1> revert to the configuration prior to the reception of the message (old configuration);

...

1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "failure cause" to "physical channel failure".

1> set the variable ORDERED\_RECONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

....

The UE shall:

1> in case of reception of a RADIO BEARER SETUP message:

...

2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

#### Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.5.4.

#### 8.2.1.12.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a RADIO BEARER SETUP FAILURE message when the UE fails to configure the new radio bearer after it detects physical channel failure, followed by the T312 expiry.

8.2.1.12.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH\_FACH (state 6-8) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL\_FACH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER SETUP message to the UE and keeps its old physical channel configuration. After T312 expiry, the UE shall perform cell reselection procedure and detect the same serving cell only. Then the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC. The content of the message shall indicate "physical channel failure" in IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER SETUP	The SS keep its old configuration.
2		→	RADIO BEARER SETUP FAILURE	The UE does not configure a new radio bearer and reverts to the old configuration.
3		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 3)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked](#):

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is identical to the message sub-type indicated by "Packet to CELL\_DCH from CELL\_FACH in PS" clause 9 of TS 34.108.

RADIO BEARER SETUP FAILURE (Step 2)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

8.2.1.12.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

After step 1 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

After step 2, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

### 8.2.1.13 Radio Bearer Establishment for transition from CELL\_FACH to CELL\_DCH: Failure (Physical channel Failure and cell reselection)

#### 8.2.1.13.1 Definition

#### 8.2.1.13.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset.

If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel establishment failure".

....

If the received message caused the UE to be in CELL\_DCH state and the UE failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

1> revert to the configuration prior to the reception of the message (old configuration);

...

1> if the old configuration does not include dedicated physical channels (CELL\_FACH state):

2> select a suitable UTRA cell according to TS 25.304;

2> if the UE selects another cell than the cell the UE camped on upon reception of the reconfiguration message:

3> initiate a cell update procedure according to TS 25.331 subclause 8.3.1, using the cause "Cell reselection";

3> after the cell update procedure has completed successfully:

4> proceed as below.

1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "failure cause" to "physical channel failure".

1> set the variable ORDERED\_RECONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

....

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or

- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI":

the UE shall:

- 1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

....

The UE shall:

- 1> in case of reception of a RADIO BEARER SETUP message:

...

- 2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

## Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.3.1.7, 8.5.4.

### 8.2.1.13.3 Test purpose

To confirm that the UE transmit a RADIO BEARER SETUP FAILURE message after it completes a cell update for the physical channel failure in the radio bearer establishment procedure.

### 8.2.1.13.4 Method of test

#### Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active.

UE: PS-DCCH\_FACH (state 6-8) as specified in clause 7.4 of TS 34.108 in cell 1.

#### Test Procedure

**Table 8.2.1.13**

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84 MHz	-60	-75	-75	-60
P-CCPICH RSCP (TDD)	dBm	-60	-75	-75	-60

Table 8.2.1.13 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies reverse of the transmission power settings for cell 1 and cell 2.

The UE is in CELL\_FACH state in cell 1. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER SETUP message to the UE. After transmitting the RADIO BEARER SETUP message, the SS shall not configure its DL dedicated physical channel in accordance with the setting in the message and release its current configuration. At the same time, the SS configures its downlink transmission power settings according to columns "T1" in table 8.2.1.13. The UE recognize that it cannot synchronize

with the SS on the new radio bearer. The UE performs cell re-selection and transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" which is set to "cell reselection". The SS shall transmit a CELL UPDATE CONFIRM message on downlink DCCH after receiving a CELL UPDATE message. The UE transmits a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and subsequently transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" to IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

#### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER SETUP	
2				The SS does not configure the new radio bearer in accordance with the settings in the message and applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.1.13.
3			Void	
4				The UE select the cell 2.
5		→	CELL UPDATE	The value "cell reselection" shall be set in IE "Cell update cause".
6		←	CELL UPDATE CONFIRM	This message include IE "new U-RNTI" and IE "new C-RNTI".
7		→	UTRAN MOBILITY INFORMATION CONFIRM	
8		→	RADIO BEARER SETUP FAILURE	The IE "failure cause" shall be set to "physical channel failure"
9		→	MEASUREMENT REPORT	

#### Specific Message Contents

##### MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 9)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked](#):

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is identical to the message sub-type "Packet to CELL\_DCH from CELL\_FACH in PS" found in clause 9 of TS 34.108.

CELL UPDATE (Step 5)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in clause 9 of TS 34.108 with the following exceptions:



Information Element	Value/remark
Cell Update Cause	"cell reselection"

#### CELL UPDATE CONFIRM (Step 6)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM" message as found in clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 5
New U-RNTI	
- SRNC Identity	'0000 0000 0000 0001'
- S-RNTI	Different from previous S-RNTI
New C-RNTI	Different from previous C-RNTI

#### RADIO BEARER SETUP FAILURE (Step 8)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Message Type	"RADIO BEARER RECONFIGURATION FAILURE"
Failure cause	"physical channel failure"

#### 8.2.1.13.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

After step 4 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "cell reselection".

After step 6 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 7 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".

After step 8, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

#### 8.2.2.2 Radio Bearer Reconfiguration from CELL\_DCH to CELL\_DCH: Failure (Unsupported configuration)

##### 8.2.2.2.1 Definition

##### 8.2.2.2.2 Conformance requirement

If the UTRAN instructs the UE to use a configuration, which it does not support and/or if the received message causes the variable UNSUPPORTED\_CONFIGURATION to be set to TRUE, the UE shall:

- 1> transmit a failure response as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "failure cause" to "configuration unsupported".

1> set the variable UNSUPPORTED\_CONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

...

The UE shall:

1> in case of reception of a RADIO BEARER RECONFIGURATION message:

...

2> transmit a RADIO BEARER RECONFIGURATION FAILURE as response message on the DCCH using AM RLC.

...

The UE should set the variable UNSUPPORTED\_CONFIGURATION to TRUE if the received message is not according to the UE capabilities.

## Reference

3GPP TS 25.331 clause 8.2.2.6, 8.2.2.9, 8.5.20.

### 8.2.2.2.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC if the received RADIO BEARER RECONFIGURATION message includes unsupported configuration parameters.

### 8.2.2.2.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH\_DCH (state 6-9) or PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

#### Test Procedure

The UE is in CELL\_DCH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE, which includes unsupported configuration parameters for the UE. The UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC. UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER RECONFIGURATION	Including unsupported configuration by the UE
2		→	RADIO BEARER RECONFIGURATION FAILURE	The UE does not change the radio bearer.
3		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 3)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked:](#)

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

#### RADIO BEARER RECONFIGURATION (FDD) (Step 1)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

#### RADIO BEARER RECONFIGURATION (TDD) (Step 1)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL\_DCH from CELL\_DCH in PS" as found in clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN (Nt)	0

#### RADIO BEARER RECONFIGURATION FAILURE (Step 2)

The contents of RADIO BEARER RECONFIGURATION FAILURE message in this test case is the same as the RADIO BEARER RECONFIGURATION FAILURE message as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Message Type	
Failure cause	Not checked

#### 8.2.2.2.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

After step 1 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC .

After step 2, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

#### 8.2.2.4 Radio Bearer Reconfiguration from CELL\_DCH to CELL\_DCH: Failure (Physical channel failure and cell reselection)

##### 8.2.2.4.1 Definition

##### 8.2.2.4.2 Conformance requirement

If the received message caused the UE to be in CELL\_DCH state and the UE failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

- 1> revert to the configuration prior to the reception of the message (old configuration);
- 1> if the old configuration includes dedicated physical channels (CELL\_DCH state) and the UE is unable to revert to the old configuration:
  - 2> initiate a cell update procedure according to TS 25.331 subclause 8.3.1, using the cause "radio link failure";
  - 2> after the cell update procedure has completed successfully:
    - 3> proceed as below.
- ...
- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "physical channel failure".
- 1> set the variable ORDERED\_RECONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

...

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- includes "Physical channel information elements":

the UE shall:

- 1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

...

The UE shall:

- 1> in case of reception of a RADIO BEARER RECONFIGURATION message:

...

- 2> transmit a RADIO BEARER RECONFIGURATION FAILURE as response message on the DCCH using AM RLC.

## Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.3.1.7.

### 8.2.2.4.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message after it completes a cell update procedure when the UE cannot reconfigure the new radio bearer and a subsequent failure to revert to the old configuration.

### 8.2.2.4.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH\_DCH (state 6-9) or PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

#### Test Procedure

The UE is in CELL\_DCH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER RECONFIGURATION message, which includes the new radio bearer parameters, to the UE. After the reception of the acknowledgement for the RADIO BEARER RECONFIGURATION message in SS, the SS shall not reconfigure dedicated physical channel in accordance with the settings in the message and release the previous configuration. The UE discovers that it cannot reconfigure the new radio bearer and wants to revert to the old configuration, but the UE cannot revert to the old configuration. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit a CELL UPDATE CONFIRM message on downlink DCCH after receiving a CELL UPDATE message. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" to IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER RECONFIGURATION	
2				The SS does not reconfigure the dedicated physical channel in accordance with the RADIO BEARER RECONFIGURATION message and shall release the old configuration.
3		→	CELL UPDATE	The value "radio link failure" shall be set in IE "Cell update cause".
4				The SS configures the dedicated physical channel according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
5		←	CELL UPDATE CONFIRM	This message include IE "Physical channel information elements".
6		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
7		→	RADIO BEARER RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "physical channel failure"
8		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	7
Measurement Command	Setup
Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 8)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked](#):

Information Element	Value/Remarks
Measurement identity	7
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

RADIO BEARER RECONFIGURATION message (Step 1)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in Clause 9 of TS 34.108.

CELL UPDATE (Step 3)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in Clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step 5) (FDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in Clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
CHOICE channel requirement	Uplink DPCH info
- UplinkDPCH Info	Same as RADIO BEARER SETUP message used to move to initial condition
Downlink information common for all radio links	Same as RADIO BEARER SETUP message used to move to initial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to initial condition



## CELL UPDATE CONFIRM (Step 5) (TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in Clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_DCH
Uplink DPCH timeslots and codes	Same as RADIO BEARER SETUP message used to move to initial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to initial condition

## RADIO BEARER RECONFIGURATION FAILURE (Step 7)

The contents of RADIO BEARER RECONFIGURATION FAILURE message in this test case is the same as the RADIO BEARER RECONFIGURATION FAILURE message as found in Clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	"physical channel failure"

## 8.2.2.4.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

After step 2 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "radio link failure".

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE on the uplink DCCH using AM RLC.

After step 6 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".

After step 7, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

## 8.2.3.11 Radio Bearer Release for transition from CELL\_FACH to CELL\_DCH: Failure (Physical channel failure and successful reversion to old configuration)

## 8.2.3.11.1 Definition

## 8.2.3.11.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset.

If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel establishment failure".

...

If the received message caused the UE to be in CELL\_DCH state and the UE failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

- 1> revert to the configuration prior to the reception of the message (old configuration);

...

- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "physical channel failure".
- 1> set the variable ORDERED\_RECONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

...

The UE shall:

- 1> in case of reception of a RADIO BEARER RELEASE message:
  - ...
  - 2> transmit a RADIO BEARER RELEASE FAILURE as response message on the DCCH using AM RLC.

#### Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.5.4.

#### 8.2.3.11.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC if the UE fails to release the radio bearers in accordance with the specified settings in RADIO BEARER RELEASE message before T312 timer expires.

#### 8.2.3.11.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH+DTCH\_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL\_FACH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER RELEASE message and keeps its current physical channel configuration. The UE is expected to encounter a failure while releasing the radio bearer. After T312 timer expires, the UE shall revert to the old radio bearer configuration, so the UE transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER RELEASE	
2				The SS does not configure the specified L1.
3		→	RADIO BEARER RELEASE FAILURE	After T312 expiry the UE fails to release a radio bearer and reverts to the old configuration.
4		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 4)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked](#):

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

**RADIO BEARER RELEASE (Step 1)**

Use the message sub-type titled "Packet to CELL\_DCH from CELL\_FACH in PS" in Clause 9 of TS 34.108.

**RADIO BEARER RELEASE FAILURE (Step 2)**

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

**8.2.3.11.5 Test requirement**

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

After step 2 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" in IE "failure cause".

After step 3, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

### 8.2.4.3 Transport channel reconfiguration from CELL\_DCH to CELL\_DCH: Failure (Physical channel failure and reversion to old configuration)

#### 8.2.4.3.1 Definition

#### 8.2.4.3.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset.

If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel establishment failure".

If the received message caused the UE to be in CELL\_DCH state and the UE failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

- 1> revert to the configuration prior to the reception of the message (old configuration);
- ...
- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "physical channel failure".
- 1> set the variable ORDERED\_RECONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The UE shall:

- 1> in case of reception of a TRANSPORT CHANNEL RECONFIGURATION message:
  - ...
  - 2> transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE as response message on the DCCH using AM RLC.

#### Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.5.4.

#### 8.2.4.3.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, if the UE fails to reconfigure the new configuration according to a TRANSPORT CHANNEL RECONFIGURATION message.

#### 8.2.4.3.4 Method of test

#### Initial Condition

System Simulator: 2 cells. – Cell 1 is active and cell 2 is inactive.

UE: CS-DCCH+DTCH\_DCH (state 6-9) or PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE. Either a streaming CS domain RAB (state 6-9) or an interactive/ background PS domain RAB (state 6-10) has been established.

## Test Procedure

**Table 8.2.4.3**

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84 MHz	-60	-60	OFF	-75
P-CCPCH RSCP (TDD)	dBm	-60	-60	OFF	-75

Table 8.2.4.3 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL\_DCH state in cell 1. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. Then the SS configures its downlink transmission power settings according to column "T1" in table 8.2.4.3. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE to restrict transmission on the uplink DCH used by the signalling radio bearer RB2. The message specifies a new configuration in cell 2 but the SS does not configure the new physical channel in cell 2 specified in this message and keep its old configuration in cell 1. Therefore, the UE cannot synchronise with the SS on the new physical channel in cell 2 and shall revert to the old configuration in cell 1 after T312 expires. Then the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting "physical channel failure" in IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	TRANSPORT CHANNEL RECONFIGURATION	
2				The SS does not reconfigure the new configuration in cell 2.
3		→	TRANSPORT CHANNEL RECONFIGURATION FAILURE	The UE reverts to the old configuration and transmits this message.
4		→	MEASUREMENT REPORT	

## Specific Message Contents

### MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 4)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked](#):

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
UL Transport channel information for all transport channels <ul style="list-style-type: none"> <li>- TFC subset</li> <li>- Restricted TrCH information <ul style="list-style-type: none"> <li>- Uplink transport channel type</li> <li>- Restricted UL TrCh identity</li> <li>- Allowed TFIs <ul style="list-style-type: none"> <li>- Allowed TFI</li> </ul> </li> </ul> </li> </ul>	DCH 5 <UL DCH for SRB 2>  0
Downlink information common for all radio links	Set to the same values as for "Packet to CELL_DCH from CELL_FACH in PS"
Downlink information for each radio link list	Set to the same values as for "Packet to CELL_DCH from CELL_FACH in PS" unless explicitly indicated otherwise in the following
- Downlink information for each radio links <ul style="list-style-type: none"> <li>- CHOICE mode</li> <li>- Primary CPICH info</li> <li>- Primary CPICH scrambling code</li> </ul>	FDD  Ref. to the Default setting for cell 2 in TS34.108 clause 6.1 (FDD)

### TRANSPORT CHANNEL RECONFIGURATION FAILURE (Step 2)

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

#### 8.2.4.3.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

After step 2 the UE shall revert to the old configuration in cell 1 and transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, and it shall set the value "physical channel failure" in IE "failure cause".

After step 3, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

#### 8.2.6.2 Physical channel reconfiguration for transition from CELL\_DCH to CELL\_DCH (code modification): Failure (Unsupported configuration)

##### 8.2.6.2.1 Definition

##### 8.2.6.2.2 Conformance requirement

If the UTRAN instructs the UE to use a configuration, which it does not support and/or if the received message causes the variable UNSUPPORTED\_CONFIGURATION to be set to TRUE, the UE shall:

- 1> transmit a failure response as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;



- 2> set the IE "failure cause" to "configuration unsupported".
- 1> set the variable UNSUPPORTED\_CONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The UE shall:

- 1> in case of reception of a PHYSICAL CHANNEL RECONFIGURATION message:

...

- 2> transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE as response message on the DCCH using AM RLC.

...

The UE should set the variable UNSUPPORTED\_CONFIGURATION to TRUE if the received message is not according to the UE capabilities.

## Reference

3GPP TS 25.331 clause 8.2.2.6, 8.2.2.9, 8.5.20.

### 8.2.6.2.3 Test purpose

To confirm that the UE keeps its configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if the received PHYSICAL CHANNEL RECONFIGURATION message includes unsupported configuration parameters for the UE.

### 8.2.6.2.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH\_DCH (state 6-9) or PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE is in CELL\_DCH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE which includes configuration parameters unsupported by the UE. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC . UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	PHYSICAL CHANNEL RECONFIGURATION	Includes configuration unsupported by the UE
2		→	PHYSICAL CHANNEL RECONFIGURATION FAILURE	The UE shall not reconfigure and continue to communicate using the old configuration.
3		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 3)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked](#):

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

**PHYSICAL CHANNEL RECONFIGURATION (FDD) (Step 1)**

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in [9] TS 34.108 Clause 9 with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

**PHYSICAL CHANNEL RECONFIGURATION (TDD) (Step 1)**

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL\_DCH from CELL\_DCH in PS" found in [9] TS 34.108 Clause 9 with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN (Nt)	0

**PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 2)**

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in [9] TS 34.108 Clause 9, with the following exceptions:

Information Element	Value/remark
Failure cause	Not checked

**8.2.6.2.5 Test requirement**

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

After step 1 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC .

After step 2, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

### 8.2.6.6 Physical channel reconfiguration for transition from CELL\_DCH to CELL\_DCH (code modification): Failure (Invalid message reception and Invalid configuration)

#### 8.2.6.6.1 Definition

#### 8.2.6.6.2 Conformance requirement

If the received reconfiguration message contains a protocol error causing the variable `PROTOCOL_ERROR_REJECT` to be set to `TRUE` according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Rejected transactions" in the variable `TRANSACTIONS`; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to the cause value "protocol error";
  - 2> include the IE "Protocol error information" with contents set to the value of the variable `PROTOCOL_ERROR_INFORMATION`.

If the variable `INVALID_CONFIGURATION` is set to `TRUE` the UE shall:

- 1> keep the configuration existing before the reception of the message;
- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
    - 3> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable `TRANSACTIONS`; and
    - 3> clear that entry.
  - 2> set the IE "failure cause" to "invalid configuration".
- 1> set the variable `INVALID_CONFIGURATION` to `FALSE`;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The UE shall:

- 1> in case of reception of a PHYSICAL CHANNEL RECONFIGURATION message:

...

- 2> transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE as response message on the DCCH using AM RLC.

## Reference

3GPP TS 25.331 clause 8.2.2.13, 8.2.2.11, 8.2.2.9.

### 8.2.6.6.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if it receives an invalid PHYSICAL CHANNEL RECONFIGURATION message which does not include any IEs except IE "Message Type".

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if it receives a PHYSICAL CHANNEL RECONFIGURATION message including some IEs set to give an invalid configuration.

### 8.2.6.6.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH\_DCH (state 6-9) or PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

#### Test Procedure

The UE is in CELL\_DCH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits an invalid PHYSICAL CHANNEL RECONFIGURATION message to the UE, which contains an unexpected critical message extension. The UE keeps the old configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, with a value "protocol error" in IE "failure cause" and also a value "Message extension not comprehended" in IE "Protocol error cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically. SS transmits a PHYSICAL CHANNEL RECONFIGURATION message including some IEs which are set to give an invalid configuration. The UE keeps its initial configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

#### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	PHYSICAL CHANNEL RECONFIGURATION	See specific message content.
2		→	PHYSICAL CHANNEL RECONFIGURATION FAILURE	The UE does not change its configuration.
2a		→	MEASUREMENT REPORT	
3		←	PHYSICAL CHANNEL RECONFIGURATION	This message includes IEs which is set to give an invalid configuration
4				The UE does not change its configuration
5		→	PHYSICAL CHANNEL RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "invalid configuration"
6		→	MEASUREMENT REPORT	

## Specific Message Contents

## MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

## MEASUREMENT REPORT (Step 0b, 2a and 6)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked](#):

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the PHYSICAL CHANNEL RECONFIGURATION message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Critical extensions	'01'H

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 2)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	Message extension not comprehended

PHYSICAL CHANNEL RECONFIGURATION (Step 3) (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
- Default DPCH Offset Value	512
- DPCH frame offset	1024

PHYSICAL CHANNEL RECONFIGURATION (Step 3) (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_FACH from CELL\_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
-PRACH TFCS	Present

#### PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 5)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

#### 8.2.6.6.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

After step 1 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting value "protocol error" in IE "failure cause" and also setting value "Message extension not comprehended" in IE "Protocol error cause".

After step 2, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

After step 4 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "invalid configuration".

After step 5, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

#### 8.2.6.11 Physical channel reconfiguration for transition from CELL\_FACH to CELL\_DCH: Failure (Physical channel failure and successful reversion to old configuration)

##### 8.2.6.11.1 Definition

##### 8.2.6.11.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset.

If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel establishment failure".

...

If the received message caused the UE to be in CELL\_DCH state and the UE failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

1> revert to the configuration prior to the reception of the message (old configuration);

...

1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and



- 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 2> clear that entry;
- 2> set the IE "failure cause" to "physical channel failure".
- 1> set the variable ORDERED\_RECONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

...

The UE shall:

- 1> in case of reception of a PHYSICAL CHANNEL RECONFIGURATION message:

...

- 2> transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE as response message on the DCCH using AM RLC.

## Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.5.4.

### 8.2.6.11.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if the UE fails to reconfigure the new physical channel according to a PHYSICAL CHANNEL RECONFIGURATION message before the T312 expiry.

### 8.2.6.11.4 Method of test

#### Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108

#### Test Procedure

The UE is in CELL\_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL\_DCH to CELL\_FACH. The UE shall reconfigure the common physical channel correctly according to this message. To complete this procedure, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL\_FACH to CELL\_DCH. However, the SS keeps its current physical channel configuration and then the UE cannot synchronise with the SS. After T312 expires, the UE attempt to revert to the old configuration. Then the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set "physical channel failure" in IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration
3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
3a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
3b		→	MEASUREMENT REPORT	
4		←	PHYSICAL CHANNEL RECONFIGURATION	
5				The SS does not reconfigure the physical channel, hence the UE shall detect a failure to reconfigure to the new physical channel.
6		→	PHYSICAL CHANNEL RECONFIGURATION FAILURE	After T312 expires the UE reverts to the old configuration and transmits this message.
7		→	MEASUREMENT REPORT	

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL\_FACH from CELL\_DCH in PS" in clause 9 of TS 34.108 for FDD or for TDD.

MEASUREMENT CONTROL (Step 3a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states except CELL_DCH
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 3b and 7)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked](#):

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the message sub-type titled "Packet to CELL\_DCH from CELL\_FACH in PS" in clause 9 of TS 34.108 for FDD or for TDD.

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 6)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

8.2.6.11.5 Test requirement

After step 2 the UE shall transit from CELL\_DCH to CELL\_FACH and transmit a PHYSICAL CHANNEL RECONFIGURATION message on the common physical channel.

After step 3a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, specifying "physical channel failure" in IE "failure cause".

After step 6, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

## 8.2.6.14 Physical channel reconfiguration for transition from CELL\_FACH to CELL\_DCH: Failure (Invalid message reception and Invalid configuration)

### 8.2.6.14.1 Definition

### 8.2.6.14.2 Conformance requirement

If the received reconfiguration message contains a protocol error causing the variable `PROTOCOL_ERROR_REJECT` to be set to `TRUE` according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Rejected transactions" in the variable `TRANSACTIONS`; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to the cause value "protocol error";
  - 2> include the IE "Protocol error information" with contents set to the value of the variable `PROTOCOL_ERROR_INFORMATION`.

If the variable `INVALID_CONFIGURATION` is set to `TRUE` the UE shall:

- 1> keep the configuration existing before the reception of the message;
- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
    - 3> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable `TRANSACTIONS`; and
    - 3> clear that entry.
  - 2> set the IE "failure cause" to "invalid configuration".
- 1> set the variable `INVALID_CONFIGURATION` to `FALSE`;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The UE shall:

- 1> in case of reception of a `PHYSICAL CHANNEL RECONFIGURATION` message:
 

...

  - 2> transmit a `PHYSICAL CHANNEL RECONFIGURATION FAILURE` as response message on the DCCH using AM RLC.

### Reference

3GPP TS 25.331 clause 8.2.2.13, 8.2.2.11, 8.2.2.9

## 8.2.6.14.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if the received message does not include any IEs except IE "Message Type".

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if it receives a PHYSICAL CHANNEL RECONFIGURATION message including some IEs which are set to give an invalid configuration.

## 8.2.6.14.4 Method of test

## Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108

## Test Procedure

The UE is in CELL\_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL\_DCH to CELL\_FACH. The UE shall reconfigure the common physical channel correctly according to this message. To complete this procedure, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits an invalid PHYSICAL CHANNEL RECONFIGURATION message to the UE which contains an unexpected critical message extension. The UE keeps the old configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting "protocol error" in IE "failure cause" and also setting "Message extension not comprehended" in IE "Protocol error cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically. SS transmits PHYSICAL CHANNEL RECONFIGURATION message including some IEs which are set to give an invalid configuration. The UE keeps current configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "invalid configuration". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration
3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters CELL_FACH state.
3a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
3b		→	MEASUREMENT REPORT	
4		←	PHYSICAL CHANNEL RECONFIGURATION	See specific message content.
5		→	PHYSICAL CHANNEL RECONFIGURATION FAILURE	The UE does not change the configuration.
5a		→	MEASUREMENT REPORT	
6		←	PHYSICAL CHANNEL RECONFIGURATION	This message includes IEs which are set to give an invalid configuration.
7				The UE does not change the configuration
8		→	PHYSICAL CHANNEL RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "invalid configuration"
9		→	MEASUREMENT REPORT	

## Specific Message Contents

## PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL\_FACH from CELL\_DCH in PS" in Annex A for FDD and Annex A for TDD.

## MEASUREMENT CONTROL (Step 3a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

## MEASUREMENT REPORT (Step 3b, 5a and 9)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked](#):

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the PHYSICAL CHANNEL RECONFIGURATION message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Critical extensions	'01'H

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 5)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	Message extension not comprehended

PHYSICAL CHANNEL RECONFIGURATION (Step 6) (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL\_DCH from CELL\_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
- Default DPCH Offset Value	512
- DPCH frame offset	1024

### PHYSICAL CHANNEL RECONFIGURATION (Step 6) (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL\_DCH from CELL\_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
-PRACH TFCS	Present

### PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 7)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

#### 8.2.6.14.5 Test requirement

After step 2 the UE shall transit from CELL\_DCH to CELL\_FACH and transmit a PHYSICAL CHANNEL RECONFIGURATION message on the common physical channel.

After step 3a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

After step 4 the UE shall keep its old configuration, transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC with "protocol error" in IE "failure cause" and also "Message extension not comprehended" in IE "Protocol error cause".

After step 5, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

After step 7 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "invalid configuration".

After step 8, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

#### 8.3.4.5 Active set update in soft handover: Reception of an ACTIVE SET UPDATE message in wrong state

##### 8.3.4.5.1 Definition

##### 8.3.4.5.2 Conformance requirement

If the UE is in another state than CELL\_DCH state upon reception of the ACTIVE SET UPDATE message, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> transmit a ACTIVE SET UPDATE FAILURE message on the uplink DCCH using AM RLC;
- 1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE FAILURE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> set the IE "failure cause" to the cause value "protocol error";
- 1> include the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state";



- 1> when the ACTIVE SET UPDATE FAILURE message has been delivered to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the ACTIVE SET UPDATE message has not been received;
  - 2> and the procedure ends.

#### Reference

3GPP TS 25.331 clause 8.3.4.0

#### 8.3.4.5.3 Test purpose

1. To confirm that the UE transmit an ACTIVE SET UPDATE FAILURE message when it receives an ACTIVE SET UPDATE message in any state other than CELL\_DCH.

#### 8.3.4.5.4 Method of test

#### Initial Condition

System Simulator: 2 cells – Cell 1 and 2 are active.

UE: PS-DCCH+DTCH\_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

#### Test Procedure

**Table 8.3.4.5**

Parameter	Unit	Cell 1	Cell 2
UTRA RF Channel Number		Ch. 1	Ch. 1
CPICH Ec	dBm/ 3.84 MHz	-60	-70

Table 8.3.4.5 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

At the start of the test, the UE establishes a radio access bearer service in the CELL\_FACH state in cell 1. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" indicating the addition of cell 2 into the active set. When the UE receives this message, UE shall transmit ACTIVE SET UPDATE FAILURE message, with the IE "failure cause" set to the cause value "protocol error" and includes the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state", on the uplink DCCH using AM RLC. UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically. SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
2			Void	
3		←	ACTIVE SET UPDATE	The SS transmit this message on downlink DCCH using AM RLC which includes IE "Radio Link Addition Information".
4		→	ACTIVE SET UPDATE FAILURE	IE "failure cause" set to the cause value "protocol error" and includes the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state".
5		→	MEASUREMENT REPORT	
6		↔	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Content

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 5)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions [and the order in which the RBs are reported is not checked](#):

Information Element	Value/Remarks
Measurement identity	1
Measured Results	Traffic volume measured results list
- CHOICE measurement	
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

ACTIVE SET UPDATE

The message to be used in this test is defined in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 2
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	0
- Secondary CPICH info	Not Present
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE
- Secondary scrambling code	1
- Spreading factor	Reference TS 34.108 clause 6.10 Parameter set
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	Not Present
- TPC Combination Index	0
- SSDT Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	Not Present
- SCCPCH information for FACH	Not Present

8.3.4.5.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

After step 3 the UE shall transmit an ACTIVE SET UPDATE FAILURE message on the DCCH. In this message, the value "Message not compatible with receiver state" shall be set in IE "Protocol Error Information".

After step 4, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

#### 8.4.1.16 Measurement Control and Report: Traffic volume measurement for transition from idle mode to CELL\_FACH state

##### 8.4.1.16.1 Definition

##### 8.4.1.16.2 Conformance requirement

Upon transition from idle mode to CELL\_FACH state, the UE shall:

- 1> store the measurement control information from the IE "Traffic volume measurement system information" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) in the variable MEASUREMENT\_IDENTITY;
- 1> begin traffic volume measurement reporting according to the assigned information.

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in TS 25.331 subclause 8.6 unless otherwise specified below.

The UE shall:

- 1> read the IE "Measurement command";
- 1> if the IE "Measurement command" has the value "setup":
  - 2> store this measurement in the variable MEASUREMENT\_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
  - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement":
    - ...
  - 2> for measurement type "UE positioning measurement":
    - ...
  - 2> for any other measurement type:
    - 3> if the measurement is valid in the current RRC state of the UE:
      - 4> begin measurements according to the stored control information for this measurement identity.

#### Reference

3GPP TS 25.331 clause 8.4.1.9.4, 3GPP TS 25.331 clause 8.4.1.3.

##### 8.4.1.16.3 Test Purpose

1. To confirm that after a state transition from idle mode to CELL\_FACH state, the UE shall begin a traffic volume type measurement, as specified in System Information Block type 11 or 12 messages on BCCH.
2. To confirm that in CELL\_FACH state, the UE shall send a MEASUREMENT REPORT message when reporting criteria is satisfied. During CELL\_FACH state, if the UE receives a MEASUREMENT CONTROL message, it shall perform the measurement and reporting tasks based on the MEASUREMENT CONTROL message received.

## 8.4.1.16.4 Method of test

## Initial Condition

System Simulator: 1cell

UE: "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

## Test Procedure

The UE is initially in idle mode. The System Information Block type 11 message is modified with respect to the default settings to request UE to perform traffic volume measurements. Key measurement parameters are as follows: measurement quantity = "RLC Buffer Payload", report criteria = "periodic reporting criteria", reporting interval = "6 seconds", reporting amount = 'infinity'. The System Information type 12 message is not broadcasted.

SS prompts the operator to make an outgoing call for one of the traffic classes supported by the UE. SS and UE shall execute procedure P6. Then the UE shall begin traffic volume measurements, and shall send MEASUREMENT REPORT message after completing first measurement. Next SS and UE shall execute procedure P10. Then SS and UE shall execute procedure P14.

UE shall continue to send MEASUREMENT REPORT messages at 6 seconds interval.

SS sends MEASUREMENT CONTROL message to the UE. This message overwrites measurement information saved from System information type 11. Key measurement parameters are as follow: measurement type = "traffic volume measurement", measurement quantity = "RLC Buffer Payload", report criteria = "Event triggered, event 4B: Transport Channel Traffic Volume becomes smaller than an absolute threshold ", Time to trigger = "5 seconds", pending time after trigger = "16 seconds", "reporting threshold = '4K'". Since there is no uplink traffic, UE shall send MEASUREMENT REPORT message after 5 seconds (time to trigger interval). SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

## Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	System Information Block type 11	The UE is idle mode and camped onto cell 1. System Information Block type 11 to be transmitted is different from the default settings (see specific message contents)
2		↔	SS executes procedure P6 (clause 7.4.2.2.2) specified in TS 34.108.	SS prompts the test operator to make an outgoing call.
2a		→	MEASUREMENT REPORT	The UE shall send the first MEASUREMENT REPORT message, as specified in SIB11.
3		↔	SS executes procedure P10 (clause 7.4.2.4.2) specified in TS 34.108.	
4		↔	SS executes procedure P14 (clause 7.4.2.6.2) specified in TS 34.108.	
5		→	Void	
6		→	MEASUREMENT REPORT	

7	→	MEASUREMENT REPORT	Time difference between any two consecutive MEASUREMENT REPORT messages should be 6 Seconds.
8	←	MEASUREMENT CONTROL	Traffic volume measurement reporting is requested if measurement is below threshold.
9			SS monitors the uplink DCCH to confirm that no MEASUREMENT REPORT messages are received in 5 seconds.
10	→	MEASUREMENT REPORT	Measurement report because event 4b is triggered
11	↔	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

## Specific Message Content

## System Information Block type 11 (Step 1) (FDD)

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not Present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 1
- Primary CPICH Tx power	Not Present
- TX Diversity indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity for RACH	Not Present
reporting	
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	4
- Traffic volume measurement object list	Rach
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	All States except CELL_DCH
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	6 seconds

System Information Block type 11 (Step 1) (TDD)

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not Present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	Set to same as used for cell 1
- TX Diversity indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity for RACH	Not Present
reporting	
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	4
- Traffic volume measurement object list	RACH
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	TRUE
- RB buffer payload average	False
- RB buffer payload variance	False
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	All States except CELL_DCH
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	6 seconds

MEASUREMENT REPORT (Step 2a)

[The order in which the RBs are reported is not checked.](#)



Information Element	Value/remark
Measurement identity	Check to see if set to 4
Measured Results	
- CHOICE measurement	Check to see if set to "traffic volume measured results list"
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

MEASUREMENT REPORT (Step 6 and 7)

[The order in which the RBs are reported is not checked.](#)

Information Element	Value/remark
Measurement identity	Check to see if set to 4
Measured Results	
- CHOICE measurement	Check to see if set to "traffic volume measured results list"
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

MEASUREMENT CONTROL (Step 8)

Information Element	Value/remark
Measurement Identity	4
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Measurement validity	Not Present
- CHOICE reporting criteria	Traffic Volume Measurement Reporting Criteria
- Parameters sent for each transport channel	
- Uplink transport channel type	Rach
- UL Transport Channel ID	Not Present
- Parameters required for each Event	
- Traffic volume event identity	4B
- Reporting threshold	4K
- Time to trigger	5000 ms
- Pending time after trigger	16000 ms
- Tx interruption after trigger	Not Present
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Event trigger
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 10)

[The order in which the RBs are reported is not checked.](#)

Information Element	Value/remark
Measurement identity	4
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Traffic Volume Measurement Event Results
- Uplink transport channel type causing the event	Rach
- UL Transport Channel identity	Not Present
- Traffic volume event identity	4B

#### 8.4.1.16.5 Test Requirement

After step 5 the UE shall send MEASUREMENT REPORT messages on the uplink DCCH containing RLC buffer payload information for all SRBs. After 6 seconds UE shall send second MEASUREMENT REPORT messages containing RLC buffer payload information for all SRBs and RAB.

After step 8 the UE shall overwrite measurement information received from system information type 11 with measurement information in MEASUREMENT CONTROL message. The UE shall not send MEASUREMENT REPORT message within time to trigger interval. After step 9 the UE shall transmit MEASUREMENT REPORT messages with event identity 4B.

#### 8.4.1.17 Measurement Control and Report: Traffic volume measurement for transition from idle mode to CELL\_DCH state

##### 8.4.1.17.1 Definition

##### 8.4.1.17.2 Conformance requirement

Upon transition from idle mode to CELL\_DCH state, the UE shall:

- 1> begin a traffic volume type measurement, assigned in System Information Block type 11 (or System Information Block type 12).

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in TS 25.331 subclause 8.6 unless otherwise specified below.

The UE shall:

- 1> read the IE "Measurement command";
- 1> if the IE "Measurement command" has the value "setup":
  - 2> store this measurement in the variable MEASUREMENT\_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
  - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement":
    - ...
  - 2> for measurement type "UE positioning measurement":
    - ...
  - 2> for any other measurement type:
    - 3> if the measurement is valid in the current RRC state of the UE:
      - 4> begin measurements according to the stored control information for this measurement identity.

#### Reference

3GPP TS 25.331 clause 8.4.1.8.4, 3GPP TS 25.331 clause 8.4.1.3.

##### 8.4.1.17.3 Test Purpose

1. To confirm that after a state transition from idle mode to CELL\_DCH state, the UE begin a traffic volume type measurement, as specified in System Information Block type 11 or 12 messages on BCCH. When entering CELL\_DCH state, the UE shall send a MEASUREMENT REPORT message when reporting criteria is satisfied.
2. During CELL\_DCH state, if the UE receives a MEASUREMENT CONTROL message, it shall perform the measurement and reporting tasks based on the MEASUREMENT CONTROL message received.

## 8.4.1.17.4 Method of test

## Initial Condition

System Simulator: 1cell

UE: "Registered idle mode on CS" (state 2) or "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

## Test Procedure

The UE is initially in idle mode. The System Information Block type 11 message is modified with respect to the default settings to request UE to perform traffic volume measurements. Key measurement parameters are as follows: measurement quantity = "Average RLC Buffer Payload", report criteria = "Event triggered, event 4B", reporting threshold = "8K", report transfer mode = "Unacknowledged mode". The System Information type 12 message is not broadcasted.

SS prompts the operator to make an outgoing call of a supported traffic class. SS and UE shall execute procedure P3 (for CS service) or P5 (for PS service). Next SS and UE shall execute procedure P7 (for CS service) or P9 (for PS service). Then SS and UE shall execute procedure P11 (for CS service) or P13 (for PS service).

UE shall begin traffic volume measurements after entering in CELL\_DCH state. The UE shall send MEASUREMENT REPORT message because uplink traffic is below threshold.

SS sends MEASUREMENT CONTROL message to the UE. This message reconfigures measurement information saved from System information type 11. Key measurement parameters are as follow: measurement type = "traffic volume measurement", measurement quantity = "RLC Buffer Payload", report criteria = "Periodic reporting criteria", reporting interval = "8 seconds", reporting amount = "8". The UE shall periodically send MEASUREMENT REPORT message to report RLC Buffer Payload for each RB.

SS sends MEASUREMENT CONTROL message to release traffic volume measurement. UE shall not send measurement report after receiving this message. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

## Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	System Information Block type 11	The UE is idle mode and camped onto cell 1. System Information Block type 11 to be transmitted is different from the default settings (see specific message contents)
2		↔	SS executes procedure P3 (clause 7.4.2.1.2) or P5 (clause 7.4.2.2.2) specified in TS 34.108.	
3		↔	SS executes procedure P7 (clause 7.4.2.3.2) or P9 (clause 7.4.2.4.2) specified in TS 34.108.	
4		↔	SS executes procedure P11 (clause 7.4.2.5.2) or P13 (clause 7.4.2.6.2) specified in TS 34.108.	
5		→	Void	
6		→	MEASUREMENT REPORT	Event 4B is triggered. This message should come on RB1.

7	←	MEASUREMENT CONTROL	Periodic Traffic volume measurement reporting is requested.
8	→	MEASUREMENT REPORT	This message should come on RB2.
9	→	MEASUREMENT REPORT	Time difference between earlier and this MEASUREMENT REPORT message should be 8 Seconds.
10	←	MEASUREMENT CONTROL	Release traffic volume measurement.
11			Wait for 8 Seconds to confirm that UE does not send measurement report message.
12	↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

## Specific Message Content

## System Information Block type 11 (Step 1) (FDD)

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not Present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 1
- Primary CPICH Tx power	Not Present
- TX Diversity indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity for RACH reporting	Not Present
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	2
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	Average RLC Buffer Payload
- Time Interval to take an average	200 msec
- Traffic volume reporting quantity	
- RB buffer payload	False
- RB buffer payload average	True
- RB buffer payload variance	False
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	CELL_DCH
- Measurement reporting mode	
- Measurement report transfer mode	Unacknowledged Mode
- Periodical or event trigger	Event Trigger
- CHOICE reporting criteria	Traffic volume measurement reporting criteria
- Parameters sent for each transport channel	
- Uplink transport channel type	Not Present
- UL transport channel id	Not Present
- Parameters required for each Event	
- Traffic volume event identity	4B
- Reporting threshold	8K
- Time to trigger	5000 ms
- Pending time after trigger	16000 ms
- Tx interruption after trigger	Not Present

## System Information Block type 11 (Step 1) (TDD)

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not Present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	Set to same as used for cell 1
- TX Diversity indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity for RACH reporting	Not Present
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	2
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	Average RLC Buffer Payload
- Traffic volume reporting quantity	
- Time Interval to take an average	200 msec
- RB buffer payload	FALSE
- RB buffer payload average	TRUE
- RB buffer payload variance	FALSE
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	CELL_DCH
- Measurement reporting mode	
- Measurement report transfer mode	Unacknowledged Mode
- Periodical or event trigger	Event Trigger
- Report criteria system Information	Traffic volume reporting criteria
- Event specific parameters	
- Event id	4B
- Reporting threshold	8K
- Time to trigger	Not Present
- Pending time after trigger	Not Present
- Tx interruption after trigger	Not Present

## MEASUREMENT REPORT (Step 6)

[The order in which the RBs are reported is not checked.](#)

Information Element	Value/remark
Measurement identity	Check to see if set to 2
Measured Results	Check to see if set to "traffic volume measured results list"
- CHOICE measurement	1
- Traffic volume measurement results	Check to see if this IE is absent
- RB identity	Check to see if this IE is present
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	2
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	Check to see if this IE is present
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	3
- RB identity	Check to see if this IE is absent
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is present
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is present
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20 (for the PS case only)
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is present
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	
- UL transport channel type causing the event	DCH
- UL Transport Channel identity	Either 1 or 5
- Traffic volume event identity	4B

MEASUREMENT CONTROL (Step 7)

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Set up
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RBe	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	Not Present
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	8
- Reporting interval	8 Sec
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 8,9)

The order in which the RBs are reported is not checked.



Information Element	Value/remark
Measurement identity	2
Measured Results	Traffic volume measured results list
- CHOICE measurement	
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

## MEASUREMENT CONTROL (Step 10)

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Release
Measurement reporting mode	Not Present
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

## 8.4.1.17.5 Test Requirement

After step 5, due to triggering of event 4B, the UE shall send MEASUREMENT REPORT message using unacknowledged mode of RLC. After step 7, UE shall send MEASUREMENT REPORT message using Acknowledged mode of RLC. After 8 seconds UE shall send second MEASUREMENT REPORT message. After step 10, the UE shall not send MEASUREMENT REPORT message.

## 8.4.1.18 Measurement Control and Report: Traffic volume measurement for transition from CELL\_FACH state to CELL\_DCH state

## 8.4.1.18.1 Definition

## 8.4.1.18.2 Conformance requirement

Upon transition from CELL\_FACH to CELL\_DCH state, the UE shall:

- retrieve each set of measurement control information of measurement type "traffic volume" stored;
- if the optional IE "measurement validity" for this measurement has not been included:
  - delete the measurement;
- if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states except CELL\_DCH":
  - stop measurement reporting; and
  - save the measurement to be used after the next transition to CELL\_FACH state;

- if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":
  - continue measurement reporting;
- if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "CELL\_DCH":
  - resume this measurement and associated reporting;
- if no traffic volume type measurement has been assigned to the UE with a MEASUREMENT CONTROL message when transiting to CELL\_DCH state:
  - continue an ongoing traffic volume type measurement, assigned in System Information Block type 11 or System Information Block type 12.

## Reference

3GPP TS 25.331 clause 8.4.1.7.4

### 8.4.1.18.3 Test Purpose

1. To confirm that the UE performs traffic volume measurements and the associated reporting when it enters CELL\_DCH state from CELL\_FACH state, and that such measurement contexts (and optionally, the reporting context) valid for CELL\_DCH state have been previously stored.
2. To confirm that the UE shall continue to perform traffic volume measurement listed in the System Information Block type 11 or 12 messages, if no previously assigned measurements are present. The UE shall transmit MEASUREMENT REPORT messages if reporting conditions stated in System Information Block type 11 or 12 messages have been satisfied.

### 8.4.1.18.4 Method of test

#### Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH\_FACH (state 6-11) as specified in clause 7.4 of TS 34.108

#### Test Procedure

Initially the UE is in CELL\_FACH state. MEASUREMENT CONTROL message is sent to the UE to establish traffic volume measurement context with optional IE "measurement validity" is not present. The UE shall perform measurement and reporting as assigned in MEASUREMENT CONTROL message. RADIO BEARER RECONFIGURATION procedure is used to take the UE from CELL\_FACH state to CELL\_DCH state. While entering CELL\_DCH state from CELL\_FACH state, the UE shall delete traffic volume measurement contexts if optional IE "measurement validity" is not present. So, in CELL\_DCH state UE shall not perform traffic volume measurement and reporting. UE is taken to the CELL\_FACH state from CELL\_DCH state using RADIO BEARER RECONFIGURATION procedure. The UE shall not send MEASUREMENT REPORT message as measurement context is already deleted.

The behavior of the UE when moved from CELL\_FACH state to CELL\_DCH state and assigned traffic volume measurement context is present with IE "measurement validity" is set to "All But CELL\_DCH state" or "CELL\_DCH state" or "All states" is tested in a similar way.

When the UE is in CELL\_FACH state, System Information is modified to assign traffic volume measurement and reporting to the UE. No previously assigned traffic volume measurement contexts are present in the UE. A SYSTEM INFORMATION CHANGE INDICATION is sent on FACH to inform the UE about the change. The UE is taken to CELL\_DCH state from CELL\_FACH state using RADIO BEARER RECONFIGURATION procedure. In CELL\_DCH state the UE shall continue traffic volume measurement and reporting as assigned in System Information. Traffic volume measurement and reporting is released by sending MEASUREMENT CONTROL message.

## Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MEASUREMENT CONTROL	Optional IE "measurement validity" is not included.
2		→	MEASUREMENT REPORT	
3		←	RADIO BEARER RECONFIGURATION	
4		→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall delete measurement context setup by MEASUREMENT CONTROL message (Step 1).
5				SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
6		←	RADIO BEARER RECONFIGURATION	
7		→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_FACH state.
8				SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
9		←	MEASUREMENT CONTROL	IE "measurement validity" is set to "All But CELL_DCH".
10		→	MEASUREMENT REPORT	.
11		←	RADIO BEARER RECONFIGURATION	
12		→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall stop traffic volume measurement setup by MEASUREMENT CONTROL message (Step 9).
13				SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
14		←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 9).
15		←	RADIO BEARER RECONFIGURATION	
16		→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_FACH state.

17	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "CELL_DCH".
18			SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
19	←	RADIO BEARER RECONFIGURATION	
20	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall start traffic volume measurement setup by MEASUREMENT CONTROL message (Step 17).
21	→	MEASUREMENT REPORT	
22	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 17)
23	←	RADIO BEARER RECONFIGURATION	
24	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_FACH state.
25	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "All states".
26	→	MEASUREMENT REPORT	
27	←	RADIO BEARER RECONFIGURATION	
28	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall continue traffic volume measurement setup by MEASUREMENT CONTROL message (Step 25).
29	→	MEASUREMENT REPORT	
30	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 25)
31	←	RADIO BEARER RECONFIGURATION	
32	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_FACH state.

33	←	MIB and SIB12 modified	Traffic volume measurements and reporting is assigned to Ues
33a	←	SYSTEM INFORMATION CHANGE INDICATION	
34	→	MEASUREMENT REPORT	
35	←	RADIO BEARER RECONFIGURATION	
36	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall continue traffic volume measurement assigned in System Information (Step 33).
37	→	MEASUREMENT REPORT	
38	←	MEASUREMENT CONTROL	UE shall release measurement context assigned in System Information (Step 33).

Specific Message Content

MEASUREMENT CONTROL (Step 1)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Measurement validity	Not Present
- Report criteria	Periodical Reporting Criteria
- Reporting amount	8
- Reporting interval	8 Sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 2)

[The order in which the RBs are reported is not checked.](#)

Information Element	Value/remark
Measurement identity	1
Measured Results	Traffic volume measured results list
- CHOICE measurement	
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

**RADIO BEARER RECONFIGURATION (Step 3, 11, 19, 27, and 35)**

Use the same message type found in TS 34.108 clause 9 with condition set to A4.

**RADIO BEARER RECONFIGURATION (Step 6, 15, 23, and 31)**

Use the same message type found in TS 34.108 clause 9 with condition set to A5.

**MEASUREMENT CONTROL (Step 9)**

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Measurement validity	All But CELL_DCH

**MEASUREMENT REPORT (Step 10)**

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	2

## MEASUREMENT CONTROL (Step 14)

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Release
Measurement reporting mode	Not Present
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

## MEASUREMENT CONTROL (Step 17)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Measurement validity	CELL_DCH

## MEASUREMENT REPORT (Step 21)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	3

## MEASUREMENT CONTROL (Step 22)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	3

## MEASUREMENT CONTROL (Step 25)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity	4
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- UL transport channel identity	RACH
- UL transport channel identity	DCH :1
- UL transport channel identity	DCH : 5
- Measurement validity	All States

## MEASUREMENT REPORT (Step 26, and 29)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	4

## MEASUREMENT CONTROL (Step 30)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	4

## Master Information Block (Step 33)

Information Element	Value/Remarks
MIB Value Tag	2



## System Information Block type 12 (Step 33) (FDD)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	Not used
- Use of HCS	CPICH RSCP
- Cell selection and reselection quality measure	Not Present
- Intra-frequency measurement system information	Remove no intra-frequency cells
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	0 dB
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	TRUE
- Intra-frequency cell id	FDD
- Cell info	Set to same code as used for cell 1
- Cell individual offset	Not Present
- Reference time difference to cell	FALSE
- Read SFN indicator	Not Present
- CHOICE mode	FDD
- Primary CPICH info	Set to same code as used for cell 1
- Primary scrambling code	Not Present
- Primary CPICH Tx power	FALSE
- TX Diversity indicator	Not Present
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity for RACH	Not Present
reporting	Not Present
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present
- Traffic volume measurement ID	5
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	True
- RB buffer payload	False
- RB buffer payload average	False
- RB buffer payload variance	False
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	All states
- Measurement reporting mode	Acknowledged Mode
- Measurement report transfer mode	Periodical
- Periodical or event trigger	Periodical reporting criteria
- Report criteria system Information	Infinity
- Reporting amount	8 seconds
- Reporting interval	8 seconds

System Information Block type 12 (Step 1) (TDD)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not Present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	Set to same as used for cell 1
- TX Diversity indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity for RACH reporting	Not Present
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	5
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	TRUE
- RB buffer payload average	FALSE
- RB buffer payload variance	FALSE
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	All states
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	8 seconds

SYSTEM INFORMATION CHANGE INDICATION (Step 33a)

Information Element	Value/Remarks
Paging record list	Not Present
BCCH modification info	
- MIB Value Tag	2
- BCCH modification time	Not Present

MEASUREMENT REPORT (Step 34, and 37)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	5

## MEASUREMENT CONTROL (Step 38)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	5

## 8.4.1.18.5 Test Requirement

The UE shall send MEASUREMENT REPORT message in steps 21, 29 and 37. The UE shall not send MEASUREMENT REPORT message in steps 5, 8, and 13.

## 8.4.1.19 Measurement Control and Report: Traffic volume measurement for transition from CELL\_DCH to CELL\_FACH state

## 8.4.1.19.1 Definition

## 8.4.1.19.2 Conformance requirement

Upon transition from CELL\_DCH to CELL\_FACH or CELL\_PCH or URA\_PCH state, the UE shall:

- 1> retrieve each set of measurement control information of measurement type "traffic volume" stored in the variable MEASUREMENT\_IDENTITY; and
  - 2> if the optional IE "measurement validity" for this measurement has not been included:
    - 3> delete the measurement associated with the variable MEASUREMENT\_IDENTITY.
  - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "CELL\_DCH":
    - 3> stop measurement reporting;
    - 3> store the measurement associated with the variable MEASUREMENT\_IDENTITY to be used after the next transition to CELL\_DCH state.
  - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":
    - 3> continue measurement reporting.
  - 2> if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "all states except CELL\_DCH":
    - 3> resume this measurement and associated reporting.
- 1> if no traffic volume type measurement has been assigned to the UE with a MEASUREMENT CONTROL message that is valid in CELL\_FACH or CELL\_PCH or URA\_PCH states (stored in the variable MEASUREMENT\_IDENTITY), which has the same identity as the one indicated in the IE "Traffic volume measurement system information":
  - 2> store the measurement control information from the IE "Traffic volume measurement system information" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) in the variable MEASUREMENT\_IDENTITY;
- 2> begin traffic volume measurement reporting according to the assigned information.

## Reference

3GPP TS 25.331 clauses 8.4.1.6.6.

## 8.4.1.19.3 Test Purpose

1. The UE shall performs traffic volume measurements and the associated reporting when it enters CELL\_FACH state from CELL\_DCH state, and that such measurement contexts (and optionally, the reporting context) valid for CELL\_FACH state have been previously stored.
2. The UE shall perform traffic volume measurement listed in the System Information Block type 11 or 12 messages, if no previously assigned measurements are present. The UE shall transmit MEASUREMENT REPORT messages if reporting conditions has been satisfied.

## Reference

3GPP TS 25.331 clause 8.4.1.6.6

## 8.4.1.19.4 Method of test

## Initial Condition

System Simulator: 1 cell

UE: PS-DCCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108

## Test Procedure

Initially the UE is in CELL\_DCH state. MEASUREMENT CONTROL message is sent to the UE to establish traffic volume measurement context with optional IE "measurement validity" is not present. The UE shall perform measurement and reporting as assigned in MEASUREMENT CONTROL message. RADIO BEARER RECONFIGURATION procedure is used to take the UE from CELL\_DCH state to CELL\_FACH state. While entering CELL\_FACH state from CELL\_DCH state, the UE shall delete traffic volume measurement contexts if optional IE "measurement validity" is not present. So, in CELL\_FACH state UE shall not perform traffic volume measurement and reporting. UE is taken to the CELL\_DCH state from CELL\_FACH state using RADIO BEARER RECONFIGURATION procedure. The UE shall not send MEASUREMENT REPORT message as measurement context is already deleted.

The behavior of the UE when moved from CELL\_DCH state to CELL\_FACH state and assigned traffic volume measurement context is present with IE "measurement validity" is set to "All But CELL\_DCH state" or "CELL\_DCH state" or "All states" is tested in a similar way.

When the UE is in CELL\_DCH state, System Information is modified to assign traffic volume measurement and reporting to the UE. No previously assigned traffic volume measurement contexts are present in the UE. The UE is taken to CELL\_FACH state from CELL\_DCH state using RADIO BEARER RECONFIGURATION procedure. In CELL\_FACH state the UE shall perform traffic volume measurement and reporting as assigned in System Information. Traffic volume measurement and reporting is released by sending MEASUREMENT CONTROL message.

## Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MEASUREMENT CONTROL	Optional IE "measurement validity" is not included.
2		→	MEASUREMENT REPORT	
3		←	RADIO BEARER RECONFIGURATION	

4	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall delete measurement context setup by MEASUREMENT CONTROL message (Step 1).
5			SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
6	←	RADIO BEARER RECONFIGURATION	
7	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
8			SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
9	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "All But CELL_DCH".
10			SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
11	←	RADIO BEARER RECONFIGURATION	
12	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall start traffic volume measurement setup by MEASUREMENT CONTROL message (Step 9).
13	→	MEASUREMENT REPORT	
14	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 9).
15	←	RADIO BEARER RECONFIGURATION	
16	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
17	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "CELL_DCH".
18	→	MEASUREMENT REPORT	
19	←	RADIO BEARER RECONFIGURATION	
20	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall stop traffic volume measurement setup by MEASUREMENT CONTROL message (Step 17).

21			SS waits for 8 seconds to confirm that there is no
22	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 17)
23	←	RADIO BEARER RECONFIGURATION	
24	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
25	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "All states".
26	→	MEASUREMENT REPORT	
27	←	RADIO BEARER RECONFIGURATION	
28	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall continue traffic volume measurement setup by MEASUREMENT CONTROL message (Step 25).
29	→	MEASUREMENT REPORT	
30	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 25)
31	←	RADIO BEARER RECONFIGURATION	
32	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
33	←	SIB12 modified	Traffic volume measurements and reporting is assigned to UEs
34	←	RADIO BEARER RECONFIGURATION	
35	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall start traffic volume measurement as assigned in System Information (Step 33).
36	→	MEASUREMENT REPORT	
37	←	MEASUREMENT CONTROL	UE shall release measurement context assigned in System Information (Step 33).

Specific Message Content

MEASUREMENT CONTROL (Step 1)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Measurement validity	Not Present
- Report criteria	Periodical Reporting Criteria
- Reporting amount	8
- Reporting interval	8 Sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 2)

[The order in which the RBs are reported is not checked.](#)

Information Element	Value/remark
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

RADIO BEARER RECONFIGURATION (Step 3, 11, 19, 27, and 34)

Use the same message type found in TS 34.108 clause 9 with condition set to A5.

RADIO BEARER RECONFIGURATION (Step 6, 15, 23, and 31)

Use the same message type found in TS 34.108 clause 9 with condition set to A4.

## MEASUREMENT CONTROL (Step 9)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity Measurement Command - CHOICE measurement type - Measurement validity	2 Setup Traffic Volume Measurement All But CELL_DCH

## MEASUREMENT REPORT (Step 13)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	2

## MEASUREMENT CONTROL (Step 14)

Information Element	Value/remark
Measurement Identity Measurement Command Measurement reporting mode Additional measurement list DPCH compressed mode status	2 Release Not Present Not Present Not Present

## MEASUREMENT CONTROL (Step 17)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity Measurement Command - CHOICE measurement type - Measurement validity	3 Setup Traffic Volume Measurement CELL_DCH

## MEASUREMENT REPORT (Step 18)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	3

## MEASUREMENT CONTROL (Step 22)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	3



## MEASUREMENT CONTROL (Step 25)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity	4
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- UL transport channel identity	RACH
- UL transport channel identity	DCH :1
- UL transport channel identity	DCH : 5
- Measurement validity	All States

## MEASUREMENT REPORT (Step 26, and 29)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	4

## MEASUREMENT CONTROL (Step 30)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	4

## System Information Block type 12 (Step 33) (FDD)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell_selection_and_reselection_quality	CPICH RSCP
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	5
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	Not Present
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	8 seconds

System Information Block type 12 (Step 33) (TDD)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	5
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	TRUE
- RB buffer payload average	FALSE
- RB buffer payload variance	FALSE
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	Not Present
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	8 seconds

MEASUREMENT REPORT (Step 36)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	5

MEASUREMENT CONTROL (Step 37)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	5

8.4.1.19.5 Test Requirement

The UE shall send MEASUREMENT REPORT message in steps 13, 29 and 36. The UE shall not send MEASUREMENT REPORT message in steps 5, 8, and 21.

8.4.1.29 Measurement Control and Report: Event based Traffic Volume measurement in CELL\_FACH state.

8.4.1.29.1 Definition

8.4.1.29.2 Conformance requirement

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in TS 25.331 subclause 8.6 unless otherwise specified below.

The UE shall:

- 1> read the IE "Measurement command";
- 1> if the IE "Measurement command" has the value "setup":
  - 2> store this measurement in the variable MEASUREMENT\_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
  - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement":
    - ...
  - 2> for measurement type "UE positioning measurement":
    - ...
  - 2> for any other measurement type:
    - 3> if the measurement is valid in the current RRC state of the UE:
      - 4> begin measurements according to the stored control information for this measurement identity.

...

For traffic volume measurements in the UE only one quantity is compared with the thresholds. This quantity is Transport Channel Traffic Volume (which equals the sum of Buffer Occupancies of RBs multiplexed onto a transport channel) in number of bytes. Every TTI, UE measures the Transport Channel Traffic Volume for each transport channel and compares it with the configured thresholds. If the monitored Transport Channel Traffic Volume exceeds an absolute threshold, i.e. if  $TCTF > \text{Reporting threshold}$ , this is an event (event 4a) that could trigger a report. The corresponding report specifies at least which measurement ID the event that triggered the report belongs to.

In CELL\_FACH state, the UE shall:

- 1> transmit a MEASUREMENT REPORT message on the uplink DCCH when the reporting criteria stored in variable MEASUREMENT\_IDENTITY are met for any ongoing traffic volume measurement or UE positioning measurement that is being performed in the UE;
- 1> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 12 (or "System Information Block Type 11" if "System Information Block Type 12" is not being broadcast);
- 1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported.

## Reference

3GPP TS 25.331, clause 14.4.2.1, 3GPP TS 25.331, clause 8.4.1.3, 8.4.2.2.

### 8.4.1.29.3 Test Purpose

1. To verify that in CELL\_FACH state when event 4a triggered at TVM set up UE sends RRC: Measurement Report with correct measurement identity and indication of UL transport channel type, radio bearer identities and corresponding RLC buffer payloads in number of bytes.
2. To verify that in CELL\_FACH state when event 4a triggered after TVM set up UE sends RRC: Measurement Report with correct measurement identity and indication of UL transport channel type, radio bearer identities and corresponding RLC buffer payloads in number of bytes.
3. To confirm that the UE includes in the MEASUREMENT REPORT message, measurement report in IE "Measurement results on RACH" as specified in System Information Block type 12.

## 8.4.1.29.4 Method of test

## Initial Condition

System Simulator: 1 cell

UE: Idle state (State 3 or State 7) as specified in clause 7.4 of TS 34.108.

System Information Block type 11 nor 12 does not include Traffic Volume measurement system information.

## Test Procedure

The UE is brought to the CELL\_FACH state after a successful incoming call attempt. The SS follows the procedure in TS 34.108 clause 7.1.3 (Mobile Terminated), to set up a user RAB, but with the default RAB replaced by the one described in 34.108, clause 6.10.2.4.3.2: Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH for DL and 6.10.2.4.4.1: Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH for UL. The radio bearer is placed into UE test loop mode 1 described in 34.109 clause 5.3. The System Information Block type 12 is modified compared to the default settings so that CPICH RSCP is reported for intra-frequency reporting when transmitting RACH messages. After this modification, SS configures transport channel traffic volume so as to exceed threshold and then sends to UE RRC: MEASUREMENT CONTROL message, which includes traffic volume measurement control parameters eg. uplink transport channel type and reporting threshold. Transport channel traffic volume exceeds threshold and after 'time to trigger' UE sends RRC: MEASUREMENT REPORT to SS. SS does not respond and after 'pending time after trigger' UE sends again same RRC: MEASUREMENT REPORT. SS configures UE's transport channel load decreases to zero and UE sends no MEASUREMENT REPORT message. SS configures transport channel traffic volume so as to exceed threshold again and after 'time to trigger' UE sends RRC: MEASUREMENT REPORT message to SS. After 'pending time after trigger' UE sends again same RRC: MEASUREMENT REPORT message. SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

## Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PAGING TYPE1	The SS transmits the message, which includes a allocated identity (P-TMSI).
1a		→	RRC CONNECTION REQUEST	
1b		←	RRC CONNECTION SETUP	
1c		→	RRC CONNECTION SETUP COMPLETE	
1d		→	SERVICE REQUEST	
1e		←	AUTHENTICATION AND CIPHERING REQUEST	
1f		→	AUTHENTICATION AND CIPHERING RESPONSE	
1g		←	SECURITY MODE COMMAND	
1h		→	SECURITY MODE COMPLETE	
1i		←	ACTIVATE RB TEST MODE	TC
1j		→	ACTIVATE RB TEST MODE COMPLETE	
1k		←	RADIO BEARER SETUP	RRC RAB SETUP See specific message contents for this message
1l		→	RADIO BEARER SETUP COMPLETE	
1m		←	CLOSED UE TEST LOOP	TC UE Test Loop Mode1
1n		→	CLOSED UE TEST LOOP COMPLETE	TC
1o		←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 12	System Information Block type 12 is different from the default settings (see specific message contents)
1p		←	SYSTEM INFORMATION CHANGE INDICATION	To notify the modification of SYSTEM INFORMATION BLOCK TYPE 12, this message is transmitted.
1q				SS configures transport channel traffic volume so as to exceed threshold.
2		←	MEASUREMENT CONTROL	SS provides Traffic Volume measurement criterias to UE.
3		→	MEASUREMENT REPORT	UE reports that Traffic Volume measurement event 4A is triggered.
4		→	MEASUREMENT REPORT	UE repeats message after 1100 ms.
4a				SS configures UE's transport channel load decreases to zero
4b				SS receive no MEASUREMENT CONTROL message.
4c				SS configures transport channel traffic volume so as to exceed threshold
4d		→	MEASUREMENT REPORT	UE reports that Traffic Volume measurement event 4A is triggered.
4e		→	MEASUREMENT REPORT	UE repeats message after 1100 ms.
5		↔	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

## Specific Message Content

## PAGING TYPE 1 (Step 1)

Information Element	Value/remark
Message Type	Only 1 entry
Paging record list	
Paging record	
CHOICE Used paging identity	
- Paging cause	
- CN domain identity	
- CHOICE UE Identity	
- p-TMSI	CN identity Terminating Call with one of the supported services PS Domain p-TMSI Allocated identity during the attach procedure.
BCCH modification info	Not Present

## RRC CONNECTION REQUEST (Step 1a)

Information Element	Value/remark
Message type	Same as the IMSI stored in the TEST USIM card, or the registered TMSI or P-TMSI
Initial UE identity	
Establishment Cause	
Protocol Error Indicator	
Measured results on RACH	Check to see if it is set to the same value as "Paging Cause" IE in the PAGING TYPE 1 message transmitted on step 1 Check to see if it is set to FALSE Not checked.

## System Information Block type 12 (Step 1o)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	5
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	0
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 1
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present
- Intra-frequency Measurement quantity	
- Filter Coefficient	Not Present
- Measurement quantity	CPICH RSCP
- Intra-frequency measurement for RACH reporting	
- SFN-SFN observed time difference	No report
- Reporting quantity	CPICH RSCP
- Maximum number of reported cells on RACH	Current cell
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	FALSE
- Cell synchronisation information reporting indicator	
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected set cells	Not present
- Measurement Reporting Mode	Acknowledged mode RLC
- Measurement Reporting Transfer Mode	Event trigger
- Periodic Reporting/Event Trigger Reporting Mode	Intra-frequency measurement reporting criteria
- CHOICE report criteria	
- Parameters required for each event	
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	15 dB
- Cells forbidden to affect reporting range	Not Present
- W	0.0
- Hysteresis	1.0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	0
- Replacement activation threshold	Not Present
- Time to trigger	60 ms
- Amount of reporting	Infinity
- Reporting interval	16 seconds
- Reporting Cell Status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2

- Inter-frequency measurement system information	Not Present
- Traffic volume measurement system information	Not Present

## MASTER INFORMATION BLOCK (Step 1o)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
MIB Value tag	2

## SYSTEM INFORMATION CHANGE INDICATION (Step 1p)

Information Element	Value/remark
Message Type	
BCCH modification info	
MIB Value Tag	2
BCCH Modification time	Not Present

## MEASUREMENT CONTROL (Step 2)

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	
- Traffic volume measurement object	
- Uplink transport channel type	RACH
- Traffic volume measurement quantity	
- Measurement quantity	RLC buffer payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	TRUE
- Average of RLC Buffer Payload for each RB	FALSE
- Variance of RLC Buffer Payload for each RB	FALSE
- Measurement validity	
- UE state	All states except CELL_DCH
- Traffic volume measurement reporting criteria	
- Traffic volume event identity	4a
- Reporting threshold	8
- Time to trigger	100
- Pending time after trigger	1000
- Tx interruption after trigger	250

## MEASUREMENT REPORT (Step 3, step 4, step 4d and step 4e)

[The order in which the RBs are reported is not checked.](#)



Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Traffic volume measured results list"
- Traffic volume measurement results	
- RB Identity	1
- RLC Buffers Payload	Check to see if this IE is present
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
- RB Identity	2
- RLC Buffers Payload	Check to see if this IE is present
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
- RB Identity	3
- RLC Buffers Payload	Check to see if this IE is present
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
- RB Identity	4
- RLC Buffers Payload	Check to see if this IE is present
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
- RB Identity	20
- RLC Buffers Payload	Check to see if the value is above the threshold
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
Measured Results on RACH	
- Measurement result for current cell	Check to see if set to 'CPICH RSCP'
- CHOICE measurement quantity	Checked to see if set to within an acceptable range.
- CPICH RSCP	Checked to see if this IE is absent
- Measurement results for monitored cells	Check to see if set to 'CPICH RSCP'
Additional Measured results	Not checked
Event Results	
- Uplink transport channel type causing the event	Check to see if set to "RACH"
- UL transport channel identity	Check to see that is not set
- Traffic volume event identity	Check to see if set to "4a"

#### 8.4.1.29.5 Test Requirement

In step 3 UE sends RRC: MEASUREMENT REPORT with correct measurement identity indication. RB identity and RLC buffers payload has reasonable values. The IE "measured results on RACH", containing the measurement value for cell 1's CPICH RSCP shall be included in this message.

In step 4, 4d and 4e UE repeats message sent in step 3.

After step 3 UE is not allowed to send user data during the 'Tx interruption after trigger' timer is running.

3GPP TSG T1 Meeting #21  
 Budapest, Hungary, 3<sup>rd</sup> – 7<sup>th</sup> November 2003

Tdoc # T1-031583

CR-Form-v7	
<b>CHANGE REQUEST</b>	
# <b>TS 34.123-1 CR 635</b> # rev <b>1</b> #	Current version: <b>5.5.0</b> #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

Proposed change affects: UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	# Corrections to 34.123-1 v5.5.0 Package 2 test case 8.4.1.14 (Revision to T1-031501)		
<b>Source:</b>	# Panasonic		
<b>Work item code:</b>	# TEI	<b>Date:</b>	# 04/11/03
<b>Category:</b>	# <b>F</b>	<b>Release:</b>	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)		2 (GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)		R96 (Release 1996)
	<b>B</b> (addition of feature),		R97 (Release 1997)
	<b>C</b> (functional modification of feature)		R98 (Release 1998)
	<b>D</b> (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

<b>Reason for change:</b>	# In step 2, power level of cell 2 is greater than that of cell 3. Hence in the measurement report, cell 2 should be reported first. Changes in revision 1 are highlight in green In the current test case, the triggering condition in step 11 is set to monitor set cell. In step 11, no monitor set cells is available, therefore measurement report will not be send in step 12. All messages previously in Annex A has been moved to clause 9 of TS 34.108.
<b>Summary of change:</b>	# The order of cells reported in measurement report in step 2 are reversed. Changes in revision 1 are highlight in green In step 11, the triggering set is changed to "active set cell" and the Choice of the reported cell is set to "report cells within active set". References to Annex A are change to clause 9 of TS 34.108.
<b>Consequences if not approved:</b>	# This test case could fail good UE.

<b>Clauses affected:</b>	# 8.4.1.14				
<b>Other specs affected:</b>	#				
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N				
<input type="checkbox"/>	<input checked="" type="checkbox"/>				
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
<input type="checkbox"/>	<input checked="" type="checkbox"/>				
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
<input type="checkbox"/>	<input checked="" type="checkbox"/>				

**Other comments:** ☹ Affects R'99, Rel-4 and Rel-5 UEs.

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☹ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 8.4.1.14 Measurement Control and Report: Cell forbidden to affect reporting range (FDD)

### 8.4.1.14.1 Definition

### 8.4.1.14.2 Conformance requirement

The reporting range affects the reporting events 1A and 1B. The reporting range is defined as a function of all the Primary CPICHs in the active set. If the parameter W is set to 0, the reporting range is defined relative to the best Primary CPICH. However, there could be cases where it is good to forbid a specific Primary CPICH to affect the reporting range. This mechanism could be effective if the operator knows by experience that the quality of a Primary CPICH is very unstable in a specific area and therefore should not affect the reporting of the other Primary CPICHs.

The UE shall ignore that a Primary CPICH is forbidden to affect the reporting range if all of the following conditions are fulfilled:

- the Primary CPICH is included in active set; and
- all cells in active set are defined as Primary CPICHs forbidden to affect the reporting range.

### Reference

3GPP TS 25.331 clause 14.1.2.1, 14.1.2.2, clause 14.1.5.4

### 8.4.1.14.3 Test Purpose

1. To confirm that the UE reports the triggering of event 1A to the SS, if a primary CPICH currently measured by the UE enters the reporting range.
2. To confirm that the UE reports the triggering of event 1B to the SS, if a primary CPICH currently measured by the UE leaves the reporting range.
3. To confirm that the UE use the forbidden cell indicated in the MEASUREMENT CONTROL message to affect the reporting range.
4. To confirm that the UE ignores that a primary CPICH is forbidden to affect the reporting range when (a) the primary CPICH concerned is included in active set and (b) all cells in the active set are defined as primary CPICHs forbidden to affect the reporting range.

### 8.4.1.14.4 Method of test

#### Initial Condition

System Simulator: 3 cells – Cell 1, cell 2 and cell 3 are active.

UE: CS-DCCH+DTCH\_DCH (State 6-9) or PS-DCCH+DTCH\_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

#### Test Procedure

Table 8.4.1.14-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions. The exact instants on which these values shall be applied are described in the texts in this clause.

Table 8.4.1.14-1

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Ch. 1			Ch. 1			Ch.1		
CPICH Ec	dBm/3.8 4 MHz	-55	-50	-55	-62	-62	-64	-76	-68	-64

The UE is initially in CELL\_DCH state of cell 1.

SS sends a MEASUREMENT CONTROL message with cell 1, cell 2 and cell 3 listed in IE "intra-frequency cell info list". In this message the IE "CHOICE reporting criteria" is set to "intra-frequency measurement report criteria", with the IE "intra-frequency event identity" set to "1A". The IE "reporting range" is set to 13 dB in the MEASUREMENT CONTROL message. The UE shall send a MEASUREMENT REPORT on the uplink DCCH, which contains the IE "Event results" to report that intra-frequency event 1A is triggered by cell 2.

SS executes the active set update procedure, requesting that cell 2 be added to the active set. The UE shall respond with ACTIVE SET UPDATE COMPLETE message on the uplink DCCH and then include cell 2 into its current active set. SS sends a MEASUREMENT CONTROL message to command that cell 1 in the active set is forbidden to affect the reporting range for event 1A. SS reconfigures the downlink transmission power settings according to values in column "T1" in table 8.4.1.14-1. The UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH to report the triggering of intra-frequency event 1A. In this message, the IE "Events results" shall indicate that intra-frequency event 1A is triggered by cell 3. SS executes the active set update procedure, requesting that cell 3 be added to the active set. The UE shall respond with ACTIVE SET UPDATE COMPLETE message on the uplink DCCH and then include cell 3 into its current active set. SS sends a MEASUREMENT CONTROL message to command that cell 1 in the active set is forbidden to affect the reporting range for event 1B. The IE "reporting range" is set to 12 dB in the MEASUREMENT CONTROL message. SS checks that no measurement report is sent by the UE. SS sends a MEASUREMENT CONTROL message to command that cell 1 in the active set to be removed from the "forbidden to affect the reporting range for event 1B" cell list. The UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH to report the triggering of intra-frequency event 1B. In this message, the IE "Events results" shall indicate that intra-frequency event 1B is triggered by cell 3. SS reconfigures the downlink transmission power settings according to values in column "T2" in table 8.4.1.14-1. SS sends a MEASUREMENT CONTROL message to command that cell 1 in the active set is forbidden to affect the reporting range for event 1B. The IE "reporting range" is set to 12 dB in the MEASUREMENT CONTROL message. SS reconfigures the downlink transmission power settings according to values in column "T1" in table 8.4.1.14-1. SS checks that no measurement report is sent by the UE. SS sends a MEASUREMENT CONTROL message to command that all cells in the active set are forbidden to update the reporting range for event 1B. The UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH to report the triggering of intra-frequency event 1B. In these messages, the IE "Events results" shall indicate that intra-frequency event 1B is triggered by cell 3.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MEASUREMENT CONTROL	UE is initially in CELL_DCH state in cell 1. Cell 1, cell 2 and cell 3 are listed in IE "Intra-frequency cell info list". The IE "CHOICE reporting criteria" is set to "Intra-frequency measurement reporting criteria" and IE "Intra-frequency event identity" is set to "1A" and "1B", with IE "reporting range" set to 13 dB for both events.
2		→	MEASUREMENT REPORT	Measurement made on cell 2 shall trigger event 1A
3		←	ACTIVE SET UPDATE	SS requests UE to add cell 2 into active set.
4		→	ACTIVE SET UPDATE COMPLETE	
5		←	MEASUREMENT CONTROL	SS request UE to monitor cell 3 for event '1A'. SS set cell 1 to be forbidden to affect reporting range.
5a				SS configures the downlink power according to column 'T1' of table 8.4.1.14-1.
6		→	MEASUREMENT REPORT	Measurement made on cell 3 shall trigger event 1A
6a		←	ACTIVE SET UPDATE	SS requests UE to add cell 3 into active set.
6b		→	ACTIVE SET UPDATE COMPLETE	
7		←	MEASUREMENT CONTROL	SS set cell 1 to be forbidden to affect reporting range for event '1B'.
7a			Void	SS checks that no measurement report is sent by the UE.
7b		←	MEASUREMENT CONTROL	Cell 1 shall not be forbidden to affect event '1B'.
8		→	MEASUREMENT REPORT	Measurement made on cell 3 shall trigger event 1B.
8a				SS configures the downlink power according to column 'T2' of table 8.4.1.14-1.
9		←	MEASUREMENT CONTROL	SS set cell 1 to be forbidden to affect reporting range for event '1B'.
9a				SS configures the downlink power according to column 'T1' of table 8.4.1.14-1.
10		→	Void	SS checks that no measurement report is sent by the UE.
11		←	MEASUREMENT CONTROL	SS request UE to monitor cell 3 for event '1B'. SS forbids all cells in active list to affect the reporting range. The SS requests UE to report the CPICH RSCP value of the active set cells.
12		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 1)

The contents of MEASUREMENT CONTROL message for this test step is identical to the same message found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	1
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Event Trigger
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	Intra-frequency measurement
CHOICE measurement type	Remove no intra-frequency
- Intra-frequency cell info list	2
- CHOICE intra-frequency cell removal	Not present
- New intra-frequency info list	Absence of this IE is equivalent to default value 0dB
- Intra-frequency cell id	Not Present
- Cell info	FALSE
- Cell individual offset	FDD
- Reference time difference to cell	Set to same code as used for cell 2
- Read SFN Indicator	Not Present
- CHOICE Mode	FALSE
- Primary CPICH Info	FDD
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Intra-frequency cell id	3
- Cell info	Not present
- Cell individual offset	Absence of this IE is equivalent to default value 0dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	Set to same code as used for cell 3
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- TX Diversity Indicator	FALSE
- Cell for measurement	1, 2 and 3
- Intra-frequency cell id	0
- Intra-frequency measurement quantity	CPICH RSCP
- Filter Coefficient	FALSE
- Measurement quantity	FALSE
- Intra-frequency reporting quantity	FALSE
- Reporting quantities for active set cells	TRUE
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	TRUE
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	1a
- Intra-frequency event identity	Not Present
- Triggering conditions 1	monitored set cells
- Triggering conditions 2	13.0 dB
- Reporting range	Not Present
- Cells forbidden to affect reporting range	Not Present
- W	0
- Hysteresis	0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	3



- Replacement activation threshold	Not Present
- Time to trigger	0 msec
- Amount of reporting	Infinity
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set on used frequency
- Maximum number of reported cells	3
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 2)

Information Element	Value/remark
RRC transaction identifier	Check to see if set to 1
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 32
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 23
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	Check to see if set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1a'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 2

## ACTIVE SET UPDATE (Step 3)

The contents of ACTIVE SET UPDATE message for this test step is identical to the same message found in [Annex A Clause 9 of TS 34.108](#) with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Radio link addition information	
- Primary CPICH Info	Set to same code as assigned for cell 2
- Primary Scrambling Code	
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	Calculated value from Cell synchronisation information
- Secondary CPICH info	Not Present
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE
- Secondary scrambling code	1
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	Not Present
- TPC Combination Index	0
- SSTD Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	Not Present
- SCCPCH information for FACH	Not Present
Radio link removal information	Not Present

## ACTIVE SET UPDATE COMPLETE (Step 4 and 6b)

Information Element	Value/remark
RRC transaction identifier	Check to see if it is set to 0

## MEASUREMENT CONTROL (Step 5)

The contents of MEASUREMENT CONTROL message for this test step is identical to the same message found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	1
Measurement Identity	1
Measurement Command	Modify
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Event Trigger
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	Intra-frequency measurement
CHOICE measurement type	Not Present
- Intra-frequency cell info list	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity	Not Present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	1a
- Intra-frequency event identity	Not Present
- Triggering conditions 1	monitored set cells
- Triggering conditions 2	13.0 dB
- Reporting range	FDD
- Cells forbidden to affect reporting range	Set to the same code as in cell 1
- CHOICE Mode	0
- Primary CPICH info	0 dB
- Primary scrambling code	Not Present
- W	3
- Hysteresis	Not Present
- Threshold used frequency	0 msec
- Reporting deactivation threshold	Infinity
- Replacement activation threshold	4000
- Time to trigger	Report cells within monitored set on used frequency
- Amount of reporting	3
- Reporting interval	Not Present
- Reporting cell status	0 msec
- CHOICE reported cells	Infinity
- Maximum number of reported cells	4000
DPCH compressed mode status info	Report cells within monitored set on used frequency
	3
	Not Present

## MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
RRC transaction identifier	Check to see if set to 1
Measurement identity	Check to see if set to 1
Measured Results	Check to see if set to "Intra-frequency measured results list"
- CHOICE measurement	Check to see if it is absent
- Intra-frequency measurement results	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Cell measured results	Check to see if it's the same code for cell 3
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is present
- Primary CPICH Info	Check to see if this IE is absent
- Primary Scrambling Code	Check to see if this IE is present
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is absent
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	Check to see if set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1a'
- Cell measurement event results	Check to see if set to 'FDD'
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	Check to see if set to the same code for cell 3
- Primary Scrambling Code	Check to see if set to the same code for cell 3

## ACTIVE SET UPDATE (Step 6a)

The contents of ACTIVE SET UPDATE message for this test step is identical to the same message found in [Annex A Clause 9 of TS 34.108](#) with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Radio link addition information	
- Primary CPICH Info	Set to same code as assigned for cell 3
- Primary Scrambling Code	
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	Calculated value from Cell synchronisation information
- Secondary CPICH info	Not Present
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE
- Secondary scrambling code	2
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	Not Present
- TPC Combination Index	0
- SSST Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	Not Present
- SCCPCH information for FACH	Not Present
Radio link removal information	Not Present

## MEASUREMENT CONTROL (Step 7 and 9)

The contents of MEASUREMENT CONTROL message for this test step is identical to the same message found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	1
Measurement Identity	1
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity	Not Present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1b
- Triggering conditions 1	Active set cells
- Triggering conditions 2	Not Present
- Reporting range	12.0 dB
- Cells forbidden to affect reporting range	
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the same code as in cell 1
- W	0
- Hysteresis	0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	3
- Replacement activation threshold	Not Present
- Time to trigger	0 msec
- Amount of reporting	Infinity
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set on used frequency
- Maximum number of reported cells	3
DPCH compressed mode status info	Not Present

#### MEASUREMENT CONTROL (Step 7b)

The contents of MEASUREMENT CONTROL message for this test step is identical to the same message found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	1
Measurement Identity	1
Measurement Command	Modify
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Event Trigger
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	Intra-frequency measurement
CHOICE measurement type	Not Present
- Intra-frequency cell info list	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity	Not Present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	1b
- Intra-frequency event identity	Active set cells
- Triggering conditions 1	Not Present
- Triggering conditions 2	12.0 dB
- Reporting range	Not Present
- Cells forbidden to affect reporting range	0
- W	0 dB
- Hysteresis	Not Present
- Threshold used frequency	3
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	0 msec
- Time to trigger	Infinity
- Amount of reporting	4000
- Reporting interval	
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set on used frequency
- Maximum number of reported cells	3
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 8)

Information Element	Value/remark
RRC transaction identifier	Check to see if set to 1
Measurement identity	Check to see if set to 1
Measured Results	Not Present
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	Check to see if set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1b'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 3

MEASUREMENT CONTROL (Step 11)

The contents of MEASUREMENT CONTROL message for this test step is identical to the same message found in [Annex A Clause 9 of TS 34.108](#) with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	1
Measurement Identity	1
Measurement Command	Modify
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Event Trigger
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting	FALSE
indicator	
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	Not present
- Cell synchronisation information reporting	TRUE
indicator	
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1b
- <b>Triggering conditions 1</b>	<b>Monitored Active set cells</b>
- Triggering conditions 2	Not Present
- Reporting range	13.0 dB
- Cells forbidden to affect reporting range	
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the same code as in cell 1
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the same code as in cell 2
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the same code as in cell 3
- W	0
- Hysteresis	0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	3
- Replacement activation threshold	Not Present
- Time to trigger	0 msec
- Amount of reporting	1
- Reporting interval	0
- Reporting cell status	
- <b>CHOICE reported cells</b>	<b>Report cells within monitored active set</b>
- Maximum number of reported cells	3
DPCH compressed mode status info	Not Present

## MEASUREMENT REPORT (Step 12)

Information Element	Value/remark
RRC transaction identifier	Check to see if set to 1
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	Check to see if set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1b'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 3

## 8.4.1.14.5 Test requirement

After step 1, the UE shall send a MEASUREMENT REPORT message on the uplink DCCH. The message shall contain the IE "Event results" to report that cell 2 has triggered intra-frequency event 1A.

After step 3, the UE shall send a ACTIVE SET UPDATE COMPLETE message on the uplink DCCH.

After step 5a, the UE shall transmit MEASUREMENT REPORT message on the uplink DCCH. The message shall contain IE "Event results" to report that cell 3 has triggered intra-frequency event 1A.

After step 6a, the UE shall send a ACTIVE SET UPDATE COMPLETE message on the uplink DCCH.

After step 7b, the UE shall transmit MEASUREMENT REPORT message on the uplink DCCH. The message shall contain IE "Event results" to report that cell 3 has triggered intra-frequency event 1B.

After step 11, the UE shall send a MEASUREMENT REPORT message on the uplink DCCH. The message shall contain IE "Event results" to report that cell 3 has triggered intra-frequency event 1B.



## CHANGE REQUEST

# **34.123-1 CR 607** # rev **1** # Current version: **5.5.0** #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	# Corrections to RRC test cases affected by NAS timer T3317		
<b>Source:</b>	# Anritsu Limited		
<b>Work item code:</b>	# MISTST1	<b>Date:</b>	# 4/11/2003
<b>Category:</b>	# <b>F</b>	<b>Release:</b>	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)		2 (GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)		R96 (Release 1996)
	<b>B</b> (addition of feature),		R97 (Release 1997)
	<b>C</b> (functional modification of feature)		R98 (Release 1998)
	<b>D</b> (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

**Reason for change:** # There is an ambiguity in 24.008 when NAS timer T3317 is started – after the GMM entity has sent the SERVICE REQUEST message (to the RRC), or after the message has been transmitted from the UE. Typically the RRC connection establishment procedure occurs between these instants and this can take a significant time compared with T3317, particularly in RRC test cases simulating error conditions. It is not appropriate for an ambiguity in a NAS specification to be resolved by RRC test cases and therefore the RRC test cases should accept either interpretation.

Specific problems identified are:

(1) In 8.1.2.2 and 8.1.2.9 the UE is expected to perform a complete series of retransmissions of RRC Connection Request. With the default SIB 1 T300×N300>T3317 therefore if T3317 is started when the GMM entity sends SERVICE REQUEST it expires before the sequence is completed and the connection is aborted.

(2) In 8.1.9 the Signalling Connection Release Indication sent on expiry of T3317 is tested. The TTCN test case imposes a lower bound (but not an upper bound) on the time before the Signalling Connection Release Indication is sent based on T3317 being started at the time the Initial Direct Transfer is received by the SS and the standard 10% tolerance. If the UE starts T3317 when the message is sent from the GMM entity the Signalling Connection Release Indication can be received by the SS too early. As this is a RRC test it is not the appropriate place to test a NAS timer.

If a test is considered necessary for T3317 then either it should be designed so the ambiguity is irrelevant (e.g. ensuring an RRC connection already exists before the GMM sends SERVICE REQUEST) or CN1 should be requested to resolve the ambiguity and any test based on an updated version 24.008.

<b>Summary of change:</b> ⌘	(1) In 8.1.2.2 and 8.1.2.9 modify SIB 1 reducing T300 so that $T300 \times N300 < T3317$ . (2) In 8.1.9 clarify that the timing of Signalling Connection Release Indication is not checked.									
<b>Consequences if not approved:</b> ⌘	The affected test cases will fail on a UE which starts T3317 after the GMM entity has sent SERVICE REQUEST.									
<b>Clauses affected:</b> ⌘	8.1.2.2.4, 8.1.2.9.4, 8.1.9.4									
<b>Other specs affected:</b>	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> </table>	Y	N		X	X			X	Other core specifications ⌘ Test specifications ⌘ 34.123-3 O&M Specifications ⌘
Y	N									
	X									
X										
	X									
<b>Other comments:</b> ⌘										

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 8.1.2.2 RRC Connection Establishment: Success after T300 timeout

### 8.1.2.2.1 Definition

### 8.1.2.2.2 Conformance requirement

If the UE has not yet received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL\_UE\_IDENTITY; and

if expiry of timer T300 occurs:

the UE shall:

1> check the value of V300; and

2> if V300 is equal to or smaller than N300:

3> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;

3> submit a new RRC CONNECTION REQUEST message to lower layers for transmission on the uplink CCCH;

3> increment counter V300;

3> restart timer T300 when the MAC layer indicates success or failure to transmit the message.

2> if V300 is greater than N300:

...

### Reference

3GPP TS 25.331 clause 8.1.3.5.

### 8.1.2.2.3 Test purpose

To confirm that the UE retries to establish the RRC connection until V300 is greater than N300 after the expiry of timer T300 when the SS transmits no response for an RRC CONNECTION REQUEST message.

### 8.1.2.2.4 Method of test

#### Initial Condition

System Simulator: 1 cell. SCCPCH configuration as specified in 6.1.1 of TS 34.108.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

NOTE: This test requires that N300 is bigger than 0, which is the case (see default contents of SIB 1, specified in TS 34.108). Expiry of timer T300 is verified only for N300 values exceeding 1.

## Test Procedure

Before the test starts, [SYSTEM INFORMATION BLOCK TYPE 1](#) and SYSTEM INFORMATION BLOCK TYPE 5 message ~~is~~are modified and this modification is notified to the UE. An internal counter K in SS is initialized to a value = 0. Following this, the UE shall transmit an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by use of selected PRACH from the available PRACH No.1 and PRACH No.2, after the operator attempts to make an outgoing call. SS ignores this message, increments K every time such a message is received and waits for T300 timer to expire. This cycle is repeated until K reaches N300. When K is equal to N300, the SS transmits an RRC CONNECTION SETUP message containing an unexpected critical message extension as specified in step 6 to the UE. The UE shall send another RRC CONNECTION REQUEST message on the uplink CCCH. SS replies with a valid RRC CONNECTION SETUP message. The UE shall then acknowledge the establishment of RRC connection by sending the RRC CONNECTION SETUP COMPLETE message on uplink DCCH.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PAGING TYPE 1	SS transmits the paging message which comprises IE "BCCH Modification Information", with the "Value Tag" different from the "MIB Value Tag" of the current Master Information Block. Also the modification time is set to 2048 radio frames from the current SFN. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH. See specific message contents.
1a		←	MASTER INFORMATION BLOCK <a href="#">SYSTEM INFORMATION BLOCK TYPE 1</a> SYSTEM INFORMATION BLOCK TYPE 5	SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting. At the same time, SS starts to transmit the affected <a href="#">SIB TYPE 1</a> and SIB TYPE 5 messages. See specific message contents.
2				SS initializes counter K to 0. Operator is asked to make an outgoing call and SS starts to wait for RRC CONNECTION REQUEST on uplink CCCH.
3		→	RRC CONNECTION REQUEST	See the clause 9 in TS 34.108 on default message content
4				SS increments K.
5				SS checks to see if K is equal to N300. If so, goes to step 6. Else, continues to execute step 3.
6		←	RRC CONNECTION SETUP	Use an invalid message in ASN.1. See specific message contents for this message.
7		→	RRC CONNECTION REQUEST	See specific message contents.
8		←	RRC CONNECTION SETUP	This is a legal message. See the clause 9 in TS 34.108 on default message content for RRC.
9				The UE configures the layer 1 and layer 2.
10		→	RRC CONNECTION SETUP COMPLETE	See clause 9 in TS 34.108 on default message content

## Specific Message Contents

## PAGING TYPE 1 (Step 1)

Information Element	Value/remark
Message Type	Not present
Paging record list	
BCCH modification info	2 Set to (current SFN + 2048)
- MIB Value Tag	
- BCCH Modification time	

SYSTEM INFORMATION TYPE 1 (Step 1a)

Use the default parameter values for the system information block with the same type specified in clause 6.1.0b of TS 34.108, with the following exceptions:

<u>- UE Timers and constants in idle mode</u>	
<u>-T300</u>	<u>2000 milliseconds</u>
<u>-N300</u>	<u>3</u>
<u>-T312</u>	<u>10 seconds</u>
<u>- N312</u>	<u>1</u>

## SYSTEM INFORMATION TYPE 5 (Step 1a) - (FDD)

Use the default parameter values for the system information block with the same type specified in clause 6.1.1 of TS 34.108, with the following exceptions:

- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	FDD
- Available Signature	'0000 0000 1111 1111'B
- Available SF	64
- Preamble scrambling code number	0
- Puncturing Limit	1.00
- Available Sub Channel number	'1111 1111 1111'B
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- RLC size	360
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	
- Normal	
- TFCI Field 1 information	
- CHOICE TFCS representation	Complete reconfiguration
- TFCS addition information	
- CHOICE CTFC Size	2 bit
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Computed Gain Factor
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0dB
- CTFC information	1
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor $\beta_c$	11
- Gain factor $\beta_d$	15
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0dB
- PRACH partitioning	
- Access Service Class	
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#1)
- Available signature End Index	7 (ASC#1)
- Assigned Sub-Channel Number	'1111'B
	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#3)
- Available signature End Index	7 (ASC#3)
- Assigned Sub-Channel Number	'1111'B
	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	

- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#5)
- Available signature End Index	7 (ASC#5)
- Assigned Sub-Channel Number	'1111'B
	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
	Not Present
- ASC Setting	FDD
- ASC Setting	0 (ASC#7)
- CHOICE mode	7 (ASC#7)
- Available signature Start Index	'1111'B
- Available signature End Index	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- Assigned Sub-Channel Number	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
CHOICE mode	FDD
- Primary CPICH DL TX power	31
- Constant value	-10
- PRACH power offset	
- Power Ramp Step	3dB
- Preamble Retrans Max	4
- RACH transmission parameters	
- Mmax	2
- NB01min	3 slot
- NB01max	10 slot
- AICH info	
- Channelisation code	3
- STTD indicator	FALSE
- AICH transmission timing	0
- PRACH info (PRACH No.2)	
- CHOICE mode	FDD
- Available Signature	'0000 0000 1111 1111'B
- Available SF	64
- Preamble scrambling code number	1
- Puncturing Limit	1.00
- Available Sub Channel number	'1111 1111 1111'B
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- RLC size	360
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150



- CRC size	16
- RACH TFCS	
- Normal	
- TFCI Field 1 information	
- CHOICE TFCS representation	Complete reconfiguration
- TFCS addition information	
- CHOICE CTFC Size	2 bit
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Computed Gain Factor
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0 dB
- CTFC information	1
- Reference TFC ID	0
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor $\beta_c$	11
- Gain factor $\beta_d$	15
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0dB
- PRACH partitioning	
- Access Service Class	
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#1)
- Available signature End Index	7 (ASC#1)
- Assigned Sub-Channel Number	'1111'B
	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
	Not Present
- ASC Setting	
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#3)
- Available signature End Index	7 (ASC#3)
- Assigned Sub-Channel Number	'1111'B
	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
	Not Present
- ASC Setting	
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#5)
- Available signature End Index	7 (ASC#5)
- Assigned Sub-Channel Number	'1111'B
	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
	Not Present
- ASC Setting	
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#7)
- Available signature End Index	7 (ASC#7)
- Assigned Sub-Channel Number	'1111'B
	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)

- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
CHOICE mode	FDD
- Primary CPICH DL TX power	31
- Constant value	-10
- PRACH power offset	
- Power Ramp Step	3dB
- Preamble Retrans Max	4
- RACH transmission parameters	
- Mmax	2
- NB01min	3 slot
- NB01max	10 slot
- AICH info	
- Channelisation code	4
- STTD indicator	FALSE
- AICH transmission timing	0

## SYSTEM INFORMATION TYPE 5 (Step 1a) – 3.84 Mcps TDD

- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Timeslot Number	14
- PRACH Channelisation Code	
- CHOICE SF	8
- Channelisation Code List	
- Channelisation Code	8/1
- Channelisation Code	8/2
- Channelisation Code	8/3
- Channelisation Code	8/4
- PRACH Midamble	Direct
-PNBSCH allocation	Not Present
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD

- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD
- PRACH info (PRACH No.2)	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Timeslot Number	14
- PRACH Channelisation Code	
- CHOICE SF	8
- Channelisation Code List	
- Channelisation Code	8/5 where i denotes an unassigned code
- Channelisation Code	8/6 where i denotes an unassigned code
- Channelisation Code	8/7 where i denotes an unassigned code
- Channelisation Code	8/8 where i denotes an unassigned code
- PRACH Midamble	Direct
-PNBSCH allocation	Not Present
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD

- Available SYNC_UL codes indices	'00001111'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD

## SYSTEM INFORMATION TYPE 5 (Step 1a) – 1.28 Mcps TDD

- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- SYNC_UL info	
- SYNC_UL codes bitmap	'11110000'B
- PRX <sub>UpPCHdes</sub>	10
- Power Ramping Step	3
- Max SYNC_UL Transmissions	8
- Mmax	32
- PRACH Definition	
- Timeslot Number	
- CHOICE TDD option	1.28 Mcps TDD
- Timeslot number	1
- PRACH Channelisation Code	
- Channelisation Code List	
- Channelisation Code	8/1
- Midamble shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	8
- Midamble Shift	Not Present
- FPACH info	
- Timeslot number	6
- Channelisation code	16/16
- Midamble Shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	16
- Midamble Shift	Not Present
- WT	4
- PNBSCH allocation	Not Present
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	½
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD

- Available SYNC_UL codes indices	'11110000'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD
- PRACH info (PRACH No.2)	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- SYNC_UL info	
- SYNC_UL codes bitmap	'11110000'B
- PRX <sub>UpPCHdes</sub>	10
- Power Ramping Step	1
- Max SYNC_UL Transmissions	8
- Mmax	32
- PRACH Definition	
- Timeslot Number	
- CHOICE TDD option	1.28 Mcps TDD
- Timeslot number	1
- PRACH Channelisation Code	
- Channelisation Code List	
- Channelisation Code	8/2
- Midamble shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	8
- Midamble Shift	Not Present
- FPACH info	
- Timeslot number	An available down-link timeslot

- Channelisation code	16/15
- Midamble Shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	16
- Midamble Shift	Not Present
- WT	4
- PNBSCH allocation	Not Present
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	$\frac{1}{2}$
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)



- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD

### RRC CONNECTION SETUP (Step 6)

SS sends a message containing a critical extension not defined for the protocol release supported by the UE, as indicated in the IE "Access stratum release indicator":

Information Element	Value/remark
RRC transaction identifier	Arbitrarily selects an integer between 0 and 3
Critical extensions	'01'H

### RRC CONNECTION REQUEST (Step 7)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Protocol Error Indicator	Check to see if set to TRUE

#### 8.1.2.2.5 Test requirement

After step 2 the UE shall select either PRACH No.1 or PRACH No.2 and transmit an RRC CONNECTION REQUEST message.

After step 6 the UE shall re-send another RRC CONNECTION REQUEST message.

After step 9 the UE shall transmit an RRC CONNECTION SETUP COMPLETE message and establish an RRC connection on the DCCH logical channel.

...

### 8.1.2.9 RRC Connection Establishment: Success after Physical channel failure and Failure after Invalid configuration

#### 8.1.2.9.1 Definition

#### 8.1.2.9.2 Conformance requirement

If the UE failed to establish, per TS 25.331 subclause 8.5.4, the physical channel(s) indicated in the RRC CONNECTION SETUP message.

After having received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL\_UE\_IDENTITY.

Before the RRC CONNECTION SETUP COMPLETE message is delivered to lower layers for transmission,

the UE shall:

- 1> clear the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> check the value of V300, and:
  - 2> if V300 is equal to or smaller than N300:
    - 3> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;
    - 3> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;
    - 3> perform the mapping of the Access Class to an Access Service Class as specified in TS 25.331 subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
    - 3> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
    - 3> increment counter V300; and
    - 3> restart timer T300 when the MAC layer indicates success or failure in transmitting the message.
  - 2> if V300 is greater than N300:
    - ...

If the UE receives an RRC CONNECTION SETUP message which contains an IE "Initial UE identity" with a value which is identical to the value of the variable INITIAL\_UE\_IDENTITY; and

the variable INVALID\_CONFIGURATION becomes set to TRUE due to the received RRC CONNECTION SETUP message:

the UE shall:

- 1> clear the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS and proceed as below;
- 1> if V300 is equal to or smaller than N300:
  - 2> set the variable PROTOCOL\_ERROR\_INDICATOR to TRUE;
  - 2> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;
  - 2> perform the mapping of the Access Class to an Access Service Class as specified in TS 25.331 subclause 8.5.13; and
  - 2> apply the given Access Service Class when accessing the RACH;
  - 2> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
  - 2> increment counter V300; and
  - 2> restart timer T300 when the MAC layer indicates success or failure in transmitting the message.
- 1> if V300 is greater than N300:
  - ...

## Reference

3GPP TS 25.331 clause 8.1.3.

### 8.1.2.9.3 Test purpose

1. To confirm that the UE retries to establish the RRC connection until V300 is greater than N300 when a physical channel failure occurs because SS does not configure the physical channel that is specified in the transmitted RRC CONNECTION SETUP message.
2. To confirm that the UE retries to establish the RRC connection until V300 is greater than N300 when the transmitted RRC CONNECTION SETUP message causes invalid configuration in the UE.

### 8.1.2.9.4 Method of test

#### Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE

#### Test Procedure

Before the test starts, [SYSTEM INFORMATION BLOCK TYPE 1 is modified and this modification is notified to the UE.](#) ~~an~~ An internal counter K in SS is initialised to a value = 0. Following this, the UE shall transmit an RRC CONNECTION REQUEST message to the SS on the uplink CCCH, after the operator attempts to make an outgoing call. SS increments K every time such a message is received. Then, SS shall send a RRC CONNECTION SETUP message that contains an invalid configuration. UE shall then send RRC CONNECTION REQUEST message to SS again. This cycle is repeated until K reaches N300+1. When K is equal to N300+1, the SS again transmits an RRC CONNECTION SETUP message including an invalid configuration. Upon receiving this message the UE shall not send another RRC CONNECTION REQUEST message.

Next the SS re-initialises the internal counter K to value = 0, after which the operator attempts to make another outgoing call. Following this, the UE shall transmit an RRC CONNECTION REQUEST message to the SS on the uplink CCCH. SS increments K every time such a message is received. SS transmits an RRC CONNECTION SETUP message to make the UE configure the physical channel in order to communicate on the DCCH but SS does not configure the physical channel. Then the UE detects the physical channel failure and transmits an RRC CONNECTION REQUEST message. This cycle is repeated until K reaches N300+1. When K is equal to N300+1, the SS transmits the RRC CONNECTION SETUP message and configures the physical channel. The UE shall detect "in-sync" from physical layer and then acknowledge the establishment of RRC connection by sending the RRC CONNECTION SETUP COMPLETE message on uplink DCCH.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0		←	<a href="#">PAGING TYPE 1</a>	<a href="#">SS transmits the paging message which comprises IE "BCCH Modification Information", with the "Value Tag" different from the "MIB Value Tag" of the current Master Information Block. Also the modification time is set to 2048 radio frames from the current SFN. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH. See specific message contents.</a>
0a		←	<a href="#">MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 1</a>	<a href="#">SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting. At the same time, SS starts to transmit the affected SIB TYPE 1 messages. See specific message contents.</a>
1				SS initialises counter K to 0. Operator is asked to make an outgoing call and SS starts to wait for RRC CONNECTION REQUEST on uplink CCCH.
2		→	RRC CONNECTION REQUEST	See specific message contents.
2a				SS increments K by 1 for every RRC CONNECTION REQUEST message received in step 2
2b		←	RRC CONNECTION SETUP	See specific message contents.
3				SS checks to see if K is equal to N300+1. If so, goes to step 3a. Else, continues to execute step 2.
3a				SS waits to verify that the UE does not send any further RRC CONNECTION REQUEST message
3b				SS re-initialises counter K to 0. Operator is asked to make another outgoing call and SS starts to wait for RRC CONNECTION REQUEST on uplink CCCH.
3c		→	RRC CONNECTION REQUEST	See specific message contents.
3d				SS increments K by 1 for every RRC CONNECTION REQUEST message received in step 3c
3e				SS checks to see if K is equal to N300+1. If so, goes to step 6. Else, continues to execute step 4

4	←	RRC CONNECTION SETUP	Use the default message with the same message sub-type specified in clause 9 in TS 34.108. SS does not configure the physical channel.
5			The next step is step 3c.
6	←	RRC CONNECTION SETUP	Use the default message with the same message sub-type specified in clause 9 in TS 34.108. SS configures the physical channel.
7			The UE configures the layer 1 and layer 2.
8	→	RRC CONNECTION SETUP COMPLETE	Use the default message with the same message sub-type specified in clause 9 in TS 34.108.

### Specific Message Contents

#### SYSTEM INFORMATION TYPE 1 (Step 1a)

Use the default parameter values for the system information block with the same type specified in clause 6.1.0b of TS 34.108, with the following exceptions:

- UE Timers and constants in idle mode	
-T300	2000 milliseconds
-N300	3
-T312	10 seconds
- N312	1

#### RRC CONNECTION REQUEST (Step 2 & step 3c, K=0)

The same message sub-type found in clause 9 of TS 34.108 applies, with the following exceptions:

Information Element	Value/remark
Initial UE identity	Same as the IMSI stored in the TEST USIM card, or the registered TMSI or P-TMSI
Establishment Cause	Originating Interactive Call or Originating Background Call or Originating Streaming Call

#### RRC CONNECTION REQUEST (Step 2 & step 3c, K>0)

The same message sub-type found in clause 9 of TS 34.108 applies, with the following exceptions:

Information Element	Value/remark
Initial UE identity	Same as the IMSI stored in the TEST USIM card, or the registered TMSI or P-TMSI
Establishment Cause	Originating Interactive Call or Originating Background Call or Originating Streaming Call
Protocol error indicator	Not Checked

#### RRC CONNECTION SETUP (Step 2b)

Use the same message sub-type found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_DCH
Uplink DPCH info	Not present

#### 8.1.2.9.5 Test requirement

After step 3a the UE shall not send any further RRC CONNECTION REQUEST message.

After step 8 the UE shall transmit an RRC CONNECTION SETUP COMPLETE message and establish an RRC connection.

....

## 8.1.9 Signalling Connection Release Indication

### 8.1.9.1 Definition

### 8.1.9.2 Conformance requirement

The UE shall, on receiving a request to release (abort) the signalling connection from upper layers for a specific CN domain:

1> if a signalling connection in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS for the specific CN domain identified with the IE "CN domain identity" exists:

2> initiate the signalling connection release indication procedure.

1> otherwise:

...

The UE shall:

1> set the IE "CN Domain Identity" to the value indicated by the upper layers. The value of the IE indicates the CN domain whose associated signalling connection the upper layers are indicating to be released;

1> remove the signalling connection with the identity indicated by upper layers from the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;

1> transmit a SIGNALLING CONNECTION RELEASE INDICATION message on DCCH using AM RLC.

When the SIGNALLING CONNECTION RELEASE INDICATION message has been submitted to lower layers for transmission the procedure ends.

In order to establish an MM connection, the mobile station proceeds as follows (TS 24 008 clause 4.5.1.1, 4.5.1.2, 4.5.3.1)

If no RR connection exists, the MM sublayer requests the RR sublayer to establish an RR connection and enters MM sublayer state WAIT FOR RR CONNECTION (MM CONNECTION). This request contains an establishment cause and a CM SERVICE REQUEST message. When the establishment of an RR connection is indicated by the RR sublayer, the MM sublayer of the mobile station starts timer T3230, gives an indication to the CM entity that requested the MM connection establishment, and enters MM sublayer state WAIT FOR OUTGOING MM CONNECTION.

If T3230 expires (i.e. no response is given but a RR connection is available) the MM connection establishment is aborted and the requesting CM sublayer is informed. If no other MM connection exists then the mobile station shall proceed as described in clause 4.5.3.1 for release of the RR connection. Otherwise the mobile station shall return to

the MM sublayer state where the request of an MM connection was received, i.e. to MM sublayer state MM connection active. Other ongoing MM connections (if any) shall not be affected.

If all MM connections are released by their CM entities, and no RRLP procedure (see 3GPP TS 04.31 [23b]) and no LCS procedure over RRC (see 3GPP TS 25.331 [23c]) is ongoing, the mobile station shall set timer T3240 and enter the state WAIT FOR NETWORK COMMAND, expecting the release of the RR connection.

The UE initiates the Service request procedure by sending a SERVICE REQUEST message. The timer T3317 shall be started after the SERVICE REQUEST message has been sent and the UE enters the GMM-SERVICE-REQUEST-INITIATED is entered. The SERVICE REQUEST message shall contain the valid P-TMSI and the Service type shall indicate either signalling or paging response (TS 24.008 clause 4.7.13.1). The following abnormal cases can be identified (TS 24.008 clause 4.7.13.5).

c) T3317 expired

The UE shall enter GMM-REGISTERED state.

If the UE is in PMM-IDLE state then the procedure shall be aborted and the UE shall initiate a PS signalling connection release.

## Reference

3GPP TS 25.331 clause 8.1.14, TS 24.008 clause 4.5.1.1, 4.5.1.2, 4.5.3.1, 4.7.13.1, 4.7.13.5.

### 8.1.9.3 Test purpose

To confirm that the UE transmits a SIGNALLING CONNECTION RELEASE INDICATION message after upper layer requests to release its signalling connection.

### 8.1.9.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

#### Test Procedure

The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by attempting to make an outgoing call. Then the UE shall establish an RRC connection and transmit a SERVICE REQUEST message or a CM SERVICE REQUEST message using the INITIAL DIRECT TRANSFER message depending on supported CN domain. The SS does not respond to this message, and the UE shall send a SIGNALLING CONNECTION RELEASE INDICATION message which includes the CN domain identity with the same value as that in the INITIAL DIRECT TRANSFER message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE initiates an outgoing call.
2		→	RRC CONNECTION REQUEST	
3		←	RRC CONNECTION SETUP	
4				The UE configures the layer 2 and layer 1.
5		→	RRC CONNECTION SETUP COMPLETE	
6		→	INITIAL DIRECT TRANSFER	Depending on supported CN domain, includes SERVICE REQUEST message (PS domain) or CM SERVICE REQUEST message (CS domain) is emdedded in INITIAL DIRECT TRANSFER message.
7				The SS does not respond and waits for T3317 (PS domain) or T3230+T3240 (CS domain).
8		→	SIGNALLING CONNECTION RELEASE INDICATION	<a href="#">The timing of this message is not checked.</a>

Specific Message Content

SIGNALLING CONNECTION RELEASE INDICATION (Step 8)

Information Element	Value/remark
CN domain identity	Check to see if this value is the same as in the uplink INITIAL DIRECT TRANSFER message.

#### 8.1.9.5 Test requirement

After step 7 the UE shall transmit a SIGNALLING CONNECTION RELEASE INDICATION message which includes the same CN domain identity as that found in the INITIAL DIRECT TRANSFER message.



## CHANGE REQUEST

# **34.123-1 CR 603** # rev **1** # Current version: **5.5.0** #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	# CR to 34.123-1 REL-5; Removal of session management test cases on QoS negotiation (Package 3+4+Low prio)		
<b>Source:</b>	# Ericsson		
<b>Work item code:</b>	# TEI	<b>Date:</b>	# 4/11/2003
<b>Category:</b>	# <b>F</b>	<b>Release:</b>	# REL-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	<p># The purpose with the test cases 11.1.1.2.1 and 11.1.1.2.2 is to verify the UE behaviour at the reply from the network of a UE originated PDP context activation where the QoS offered from the network is lower than the one requested from the UE. In 11.1.1.2.1 the offered QoS from the network is better than the minimum QoS stored in the UE and the UE is expected to accept the PDP context. In 11.1.1.2.2 the offered QoS is lower than the minimum QoS and the UE is expected to deactivate the PDP context.</p> <p>Moreover, the testcases 11.1.4.1.2.1 and 11.1.4.1.2.2 aim to verify the correspondent scenario for secondary PDP context activation.</p> <p>However, there are no UE requirements in the core specifications on the criteria to keep or deactivate the PDP context upon the reception of an offered QoS that is different from the requested QoS. TS 24.008 6.1.3.1.1 and 6.1.3.2.1 just say: "If the offered QoS parameters received from the network differ from the QoS requested by the UE, the UE shall either accept the negotiated QoS or initiate the PDP context deactivation procedure."</p> <p>Strictly, a test case can not be based on non-existing core specification UE requirements. And in our opinion, it doesn't feel meaningful to have a test case that tolerates two different UE behaviours (accept or deactivate).</p> <p>Therefore, we propose for now to remove these two test cases.</p>
<b>Summary of change:</b>	# Test cases 11.1.1.2.1, 11.1.1.2.2, 11.1.4.1.2.1 and 11.1.4.1.2.2 are removed
<b>Consequences if</b>	# A good UE may fail the test cases.

**not approved:**

<b>Clauses affected:</b>	⌘	11.1.1.2.1, 11.1.1.2.2, 11.1.4.1.2.1 and 11.1.4.1.2.2 (all deleted)										
<b>Other specs affected:</b>	⌘	<table border="1"><tr><td>Y</td><td>N</td></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr><tr><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr></table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘ 34.123-2
		Y	N									
		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
<input checked="" type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input checked="" type="checkbox"/>											
	Test specifications											
	O&M Specifications											
<b>Other comments:</b>	⌘	Affects REL-5, REL-4 and R99.										

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 11.1.1.2 QoS offered by the network is a lower QoS

### 11.1.1.2.1 ~~QoS accepted by UE~~ Void

#### ~~11.1.1.2.1.1 Definition~~

#### ~~11.1.1.2.1.2 Conformance requirement~~

~~In order to request a PDP context activation, the UE sends an ACTIVATE PDP CONTEXT REQUEST message to the network, enters the state PDP ACTIVE PENDING and starts timer T3380. The message contains the selected NSAPI, PDP type, requested QoS and, if the UE requests a static address, the PDP address. The UE shall ensure that the selected NSAPI is not currently being used by another Session Management entity in the UE.~~

~~Upon receipt of an ACTIVATE PDP CONTEXT REQUEST message, the network selects a radio priority level based on the QoS negotiated and may reply with an ACTIVATE PDP CONTEXT ACCEPT message. Upon receipt of the message ACTIVATE PDP CONTEXT ACCEPT the UE shall stop timer T3380, shall enter the state PDP ACTIVE. If the offered QoS parameters received from the network differ from the QoS requested by the UE, the UE shall either accept the negotiated QoS or initiate the PDP context deactivation procedure.~~

~~In UMTS, both the network and the UE shall store the LLC SAPI and the radio priority in the PDP context.~~

#### Reference

~~3GPP TS 24.008 clause 6.1.3.1.1.~~

#### ~~11.1.1.2.1.3 Test purpose~~

~~To test the behaviour of the UE when the SS responds to a PDP context activation request with a lower QoS than that requested.~~

#### ~~11.1.1.2.1.4 Method of test~~

#### Initial conditions

System Simulator:

— 1 cell, default parameters.

User Equipment:

— The UE is in GMM state "GMM REGISTERED, normal service" with valid P-TMSI and CKSN.

#### Related ICS/IXIT statements

— PS Supported ————— yes/no

— User setting of Minimum QoS supported — yes/no

— Method of setting minimum QoS

— Method of context activation

Test procedure

The requested QoS and Minimum QoS are set. A context activation is requested by the user. On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with QoS lower than the requested but higher than or equal to the minimum. The SS then sends a MODIFY PDP CONTEXT REQUEST message and the UE shall respond with a MODIFY PDP CONTEXT ACCEPT message to confirm the context is active.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a context activation
1a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originating Background Call".
2		→	ACTIVATE PDP CONTEXT REQUEST	Request a PDP context activation
2a		SS		The SS starts ciphering and integrity protection.
2b		SS		The SS establishes the Radio Access Bearer.
3		←	ACTIVATE PDP CONTEXT ACCEPT	Accept a PDP context activation
4		←	MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Send a modify request to UE for the activated context
5		→	MODIFY PDP CONTEXT ACCEPT (UE TO NETWORK DIRECTION)	Accept the modification request from network to show context is activated

Specific message contents

ACTIVATE PDP CONTEXT REQUEST (step 2)

Information Element	Value/remark
Requested NSAPI	
Requested LLC SAPI	
Requested QoS	
→ Maximum bitrate for uplink	
→ Maximum bitrate for downlink	
Requested PDP address	
Access Point Name	Not checked
Protocol configuration options	Not checked

~~ACTIVATE PDP CONTEXT ACCEPT (step 3)~~

Information Element	Value/remark
<del>Negotiated-NSAPI</del>	
<del>Negotiated-LLC-SAPI</del>	
<del>Negotiated-QoS</del>	
<del>—Maximum bitrate for uplink</del>	<del>Set to a lower value than received as the corresponding field in the ACTIVATE PDP CONTEXT REQUEST message received from the UE</del>
<del>—Maximum bitrate for downlink</del>	<del>Set to a lower value than received as the corresponding field in the ACTIVATE PDP CONTEXT REQUEST message received from the UE</del>
<del>Radio Priority</del>	
<del>PDP address</del>	
<del>Protocol configuration options</del>	<del>Not present</del>
<del>Packet flow identifier</del>	

~~11.1.1.2.1.5 — Test requirements~~

~~To pass the test UE shall:~~

- ~~— when the SS responds to a PDP context activation request, initiated by the UE, with the QoS lower than the requested but higher than or equal to the minimum, the UE shall complete the PDP context activation procedure.~~
- ~~— to see if the PDP context activation was successful, SS shall request PDP context modification and UE shall accept it.~~

11.1.1.2.2 ~~QoS rejected by UE~~ [Void](#)

~~11.1.1.2.2.1 — Definition~~

~~11.1.1.2.2.2 — Conformance requirement~~

~~In order to request a PDP context activation, the UE sends an ACTIVATE PDP CONTEXT REQUEST message to the network, enters the state PDP ACTIVE PENDING and starts timer T3380. The message contains the selected NSAPI, PDP type, requested QoS and, if the UE requests a static address, the PDP address. The UE shall ensure that the selected NSAPI is not currently being used by another Session Management entity in the UE.~~

~~Upon receipt of an ACTIVATE PDP CONTEXT REQUEST message, the network selects a radio priority level based on the QoS negotiated and may reply with an ACTIVATE PDP CONTEXT ACCEPT message. Upon receipt of the message ACTIVATE PDP CONTEXT ACCEPT the UE shall stop timer T3380, shall enter the state PDP ACTIVE. If the offered QoS parameters received from the network differ from the QoS requested by the UE, the UE shall either accept the negotiated QoS or initiate the PDP context deactivation procedure.~~

Reference

~~3GPP TS 24.008 clause 6.1.3.1.1.~~

~~11.1.1.2.2.3 — Test purpose~~

~~To test the behaviour of the UE when the QoS offered by SS in response to a PDP context activation request is not acceptable to the UE.~~

~~11.1.1.2.2.4 — Method of test~~

Initial conditions

System Simulator:

- 1 cell, default parameters.

User Equipment:

~~The UE is in GMM state "GMM REGISTERED, normal service" with valid P-TMSI and CKSN.~~

Related ICS/IXIT statements

~~PS Supported \_\_\_\_\_ yes/no~~

~~User setting of Minimum QoS supported yes/no~~

~~Method of setting minimum QoS~~

~~Method of context activation~~

Test procedure

~~The requested QoS and Minimum QoS are set as follows. The requested QoS is set to Traffic class of "Background class" and a certain value of the SDU error ratio. The minimum QoS is set to Traffic class of "Background class" and an SDU error ratio of  $1 \cdot 10^{-4}$ , which should correspond to a value higher than or equal to the corresponding value in the requested QoS. A PDP context activation is requested by the user. On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT message is returned by the SS with SDU error ratio higher than the corresponding value in the minimum QoS, which corresponds to QoS lower than the minimum. The UE shall then send a DEACTIVATE PDP CONTEXT REQUEST message. A DEACTIVATE PDP CONTEXT ACCEPT message will be sent in return by the SS.~~

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a context activation
1a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originating Background Call".
1b	SS			The SS starts ciphering and integrity protection.
2	→		ACTIVATE PDP CONTEXT REQUEST	Request a PDP context activation Traffic class = "Background class"
2a	SS			The SS establishes the RAB.
3	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context activation. Traffic class = "Background class" SDU error ratio is set to a higher ratio than in the ACTIVATE PDP CONTEXT REQUEST message in step 2.
4	→		DEACTIVATE PDP CONTEXT REQUEST	Deactivate the PDP context. Cause = "Qos not accepted" (0x25)
5	←		DEACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context deactivation
6	SS			The SS releases the RAB.

## Specific message contents

## ACTIVATE PDP CONTEXT REQUEST (step 2)

Information Element	Value/remark
Requested NSAPI	
Requested LLC SAPI	
Requested QoS	
—— Traffic class	Background class
-SDU error ratio	Any of the following values: $1*10^{-6}$ , $1*10^{-4}$
Requested PDP address	
Access Point Name	Not checked
Protocol configuration options	Not checked

## ACTIVATE PDP CONTEXT ACCEPT (step 3)

Information Element	Value/remark
Negotiated LLC SAPI	
Negotiated QoS	
—— Traffic class	Background class
SDU error ratio	$1*10^{-3}$
Radio Priority	
PDP address	
Protocol configuration options	Not present
Packet flow identifier	Not present

## DEACTIVATE PDP CONTEXT REQUEST (step 4)

Information Element	Value/remark
SM cause	"QoS not accepted" (0x25)

## 11.1.1.2.2.5 ——— Test requirements

The UE shall reject the QoS offered by the SS in response to a PDP context activation request, if the QoS is not acceptable to the UE.

## 11.1.4.1.2 QoS Offered by Network is a lower QoS

11.1.4.1.2.1 ~~QoS accepted by UE~~ Void~~11.1.4.1.2.1.1 Definition~~~~This test can only be performed if minimum QoS can be set by the user.~~~~11.1.4.1.2.1.2 Conformance requirement~~~~In order to request a Secondary PDP context activation with the same PDP address and APN as an already active PDP context, the UE shall send an ACTIVATE SECONDARY PDP CONTEXT REQUEST message to the network, enter the state PDP ACTIVE PENDING and start timer T3380. If the QoS offered by the network is acceptable to UE, then upon receipt of the message ACTIVATE SECONDARY PDP CONTEXT ACCEPT the UE shall stop timer T3380.~~~~In GSM the UE shall initiate establishment of the logical link for the LLC SAPI indicated by the network, with the offered QoS and selected radio priority level, if no logical link has been already established for that SAPI.~~~~Reference~~~~3GPP TS 24.008 clauses 6.1.3.2 and 6.1.3.2.1.~~~~11.1.4.1.2.1.3 Test purpose~~~~To test the behaviour of the UE when the SS responds to a Secondary PDP context activation request with a lower QoS than that requested.~~~~11.1.4.1.2.1.4 Method of test~~~~Initial conditions~~~~System Simulator:~~~~— 1 cell, default parameters.~~~~User Equipment:~~~~— The UE is in GMM state "GMM REGISTERED, normal service" with valid P-TMSI and CKSN.~~~~Related ICS/IXIT statements~~~~— PS Supported ————— yes/no~~~~— User setting of Minimum QoS supported — yes/no~~~~— Method of setting minimum QoS~~~~— Method of context activation~~~~— Secondary PDP context activation supported — yes/no~~



**Test procedure**

The requested QoS and Minimum QoS are set. A PDP context activation is requested by the user and accepted by the SS. Secondary context activation is requested by the user. On receipt of the ACTIVATE SECONDARY PDP CONTEXT REQUEST message an ACTIVATE SECONDARY PDP CONTEXT ACCEPT is returned by the SS with a QoS lower than the requested but higher than or equal to the minimum. The SS then sends a MODIFY PDP CONTEXT REQUEST message and the UE shall respond with a MODIFY PDP CONTEXT ACCEPT message to confirm the context is active.

**Expected sequence**

Step	Direction		Message	Comments
	UE	SS		
1		UE		Initiate a PDP context activation
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context
3	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
4		UE		Initiate a secondary PDP context activation
5	→		ACTIVATE SECONDARY PDP CONTEXT REQUEST	Request a Secondary PDP context activation
6	←		ACTIVATE SECONDARY PDP CONTEXT ACCEPT	Accept a Secondary PDP context activation
7	←		MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Send a modify request to UE for the activated context
8	→		MODIFY PDP CONTEXT ACCEPT (UE TO NETWORK DIRECTION)	Accept the modification request from network to show context is activated

**Specific message contents**

None.

**11.1.4.1.2.1.5 Test requirements**

To pass the test when the SS responds to a Secondary PDP context activation request, initiated by the UE, with the QoS lower than the requested but higher than or equal to the minimum, the UE shall complete the Secondary PDP context activation procedure. To see if the PDP context activation was successful, SS shall request PDP context modification and UE shall accept it.

**11.1.4.1.2.2 QoS rejected by UE**

**11.1.4.1.2.2.1 Definition**

This test can only be performed if minimum QoS can be set by the user.

**11.1.4.1.2.2.2 Conformance requirement**

In order to request a Secondary PDP context activation with the same PDP address and APN as an already active PDP context, the UE shall send an ACTIVATE SECONDARY PDP CONTEXT REQUEST message to the network.

Upon receipt of the message ACTIVATE SECONDARY PDP CONTEXT ACCEPT offering a QoS which is not acceptable to the UE, the UE shall initiate the PDP context deactivation procedure.

**Reference**

3GPP TS 24.008 clauses 6.1.3.2 and 6.1.3.2.1.

~~11.1.4.1.2.2.3~~ ~~Test purpose~~

~~To test the behaviour of the UE when the QoS, offered by SS in response to a Secondary PDP context activation request is not acceptable to the UE.~~

~~11.1.4.1.2.2.4~~ ~~Method of test~~

~~Initial conditions~~

~~System Simulator:~~

~~— 1 cell, default parameters.~~

~~User Equipment:~~

~~— The UE is in GMM state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.~~

~~Related ICS/IXIT statements~~

~~— PS-Supported ————— yes/no~~

~~— User setting of Minimum QoS supported — yes/no~~

~~— Method of setting minimum QoS~~

~~— Method of context activation~~

~~— Secondary PDP context activation supported — yes/no~~

~~Test procedure~~

~~The requested QoS and Minimum QoS are set. PDP context activation is requested by the user and accepted by the SS. Secondary PDP context activation is requested by the user. On receipt of the ACTIVATE-SECONDARY-PDP-CONTEXT-REQUEST message an ACTIVATE-SECONDARY-PDP-CONTEXT-ACCEPT message is returned by the SS with the QoS lower than the minimum. The UE shall then send a DEACTIVATE-PDP-CONTEXT-REQUEST message for the secondary PDP context. A DEACTIVATE-PDP-CONTEXT-ACCEPT message will be sent in return by the SS.~~

~~Expected sequence~~

Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a PDP context activation
2	→		ACTIVATE-PDP-CONTEXT-REQUEST	Activate a PDP context
3		←	ACTIVATE-PDP-CONTEXT-ACCEPT	Accept the PDP context
4	UE			Initiate a secondary PDP context activation
5	→		ACTIVATE-SECONDARY-PDP-CONTEXT-REQUEST	Request a Secondary PDP context activation
6		←	ACTIVATE-SECONDARY-PDP-CONTEXT-ACCEPT	Accept the Secondary PDP context activation with QoS lower than Minimum QoS
7	→		DEACTIVATE-PDP-CONTEXT-REQUEST	Request deactivation of the secondary PDP context
8		←	DEACTIVATE-PDP-CONTEXT-ACCEPT	Accept the PDP context deactivation

~~Specific message contents~~

~~In step 3 Negotiated-QoS IE is equal to Requested-QoS IE in step 2 and step 5.~~

~~In step 7 SM cause IE shall have value #37: QoS not accepted.~~

~~Tear down indicator IE shall not be included in the DEACTIVATE PDP CONTEXT REQUEST message because only the PDP context for this specific TI shall be deactivated.~~

#### ~~4.4.4.1.2.2.5 Test requirements~~

~~The UE shall reject the QoS offered by the SS in response to a Secondary PDP context activation request, if the QoS is not acceptable to the UE.~~

3GPP TSG T1 Meeting #21  
Budapest, Hungary, 3<sup>rd</sup> – 7<sup>th</sup> November 2003

Tdoc # T1-031630

CR-Form-v7

## CHANGE REQUEST

⌘ **TS 34.123-1 CR 638** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections to 34.123-1 v5.5.0 Package 2 test case 8.4.1.7		
<b>Source:</b>	⌘ Panasonic		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 04/11/03
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)		2 (GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)		R96 (Release 1996)
	<b>B</b> (addition of feature),		R97 (Release 1997)
	<b>C</b> (functional modification of feature)		R98 (Release 1998)
	<b>D</b> (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

<b>Reason for change:</b> ⌘	<ol style="list-style-type: none"> <li>In step 10, SS should not send MEASUREMENT CONTROL message to UE requesting for intra-frequency measurement when UE is in CELL_FACH state as this may lead to undesirable result even for a good UE.</li> <li>Test purpose no. 4 states "To confirm that a MEASUREMENT CONTROL message received in CELL_DCH state overrides the measurement and associated reporting contexts maintained in the UE by virtue of System Information Block type 11 or 12 messages" does not seem to be covered by this test case.</li> <li>After step 25, SS should check that UE does not send any measurement report to ensure that the store measurement control information has been deleted following the cell reselection. In addition, test purpose should be updated according to this test requirement.</li> </ol> <p><b>Changes made in revision 1:</b></p> <ol style="list-style-type: none"> <li>Editorial error in the last Measurement Control text in the test procedure.</li> <li>A comment about what Measurement Id that shall be reported should be added in step 28 to the expected sequence.</li> <li>Test requirement for step 28 should be added.</li> </ol>
<b>Summary of change:</b> ⌘	<ol style="list-style-type: none"> <li>Step 9d, 9e, 11, 12 and 13 are proposed to be removed.</li> <li>Step 27 and step 28 are added to fulfil test purpose no. 4.</li> <li>Test requirement to ensure that after step 25, the UE does not send MEASUREMENT REPORT message with "measurement identity" = '12' has</li> </ol>

been added. Similar comments were added in the step 25 and 26 of the test sequence. Test purpose to confirm that the UE deletes stored measurement control information following a cell reselection has been added.

Changes made in revision 1 are highlighted in green:

4. Spelling correction for Measurement Control in the test procedure.

5. Comment added in step 28 of the expected sequence indicating that the expected measurement identity should be '1' and the report is triggered by cell 3.

6. Test requirement is updated to include measurement report in step 28.

**Consequences if not approved:** ☞ This test case could fail good UE.

**Clauses affected:** ☞ 8.4.1.7

<b>Other specs affected:</b>	☞	<b>Y</b>	<b>N</b>	Other core specifications	☞	
			<b>X</b>			Test specifications
			<b>X</b>			O&M Specifications

**Other comments:** ☞ Affects R'99, Rel-4 and Rel-5 UEs.

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>.

Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☞ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

### 8.4.1.7 Measurement Control and Report: Intra-frequency measurement for transition from CELL\_FACH to CELL\_DCH state (FDD)

#### 8.4.1.7.1 Definition

#### 8.4.1.7.2 Conformance requirement

Upon transition from CELL\_FACH to CELL\_DCH state:

- 1> if intra-frequency measurements applicable to CELL\_DCH state are stored in the variable MEASUREMENT\_IDENTITY:
  - 2> if the cell in which the UE transitioned from CELL\_FACH state is included in the active set for the CELL\_DCH state, the UE shall:
    - 3> resume the measurement reporting.
  - 2> otherwise:
    - 3> the UE should not resume the measurement reporting. If the UE does not resume the measurement reporting, the measurement shall be restarted when a MEASUREMENT CONTROL message is received with the corresponding measurement identity.

...

Upon cell reselection while in CELL\_FACH/CELL\_PCH/URA\_PCH state and the cell reselection has occurred after the measurement control information was stored, the UE shall:

- 1> delete all measurements of type intra-frequency, inter-frequency, and inter-RAT associated with the variable MEASUREMENT\_IDENTITY;

...

1> delete the traffic volume measurements that have not been set up or modified through a MEASUREMENT CONTROL message.

...

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

- 1> read the IE "Measurement command";
- 1> if the IE "Measurement command" has the value "setup":
  - 2> store this measurement in the variable MEASUREMENT\_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
  - 2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
    - 3> if the UE is in CELL\_FACH state:
      - 4> the UE behaviour is not specified.
  - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency:

...

- 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
  - ...
- 2> for measurement type "UE positioning measurement":
  - ...
- 2> for any other measurement type:
  - 3> if the measurement is valid in the current RRC state of the UE:
    - 4> begin measurements according to the stored control information for this measurement identity.
- 1> if the IE "Measurement command" has the value "modify":
  - 2> for all IEs present in the MEASUREMENT CONTROL message:
    - 3> if a measurement was stored in the variable MEASUREMENT\_IDENTITY associated to the identity by the IE "measurement identity":
      - 4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
        - 5> if the UE is in CELL\_FACH state:
          - 6> the UE behaviour is not specified.
      - 4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
        - ...
        - 5> replace the corresponding information (the IEs listed above and all their children) stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;
        - 5> leave all other stored information elements unchanged in the variable MEASUREMENT\_IDENTITY.
- 1> if the IE "measurement command" has the value "release":
  - 2> terminate the measurement associated with the identity given in the IE "measurement identity";
  - 2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT\_IDENTITY.

## Reference

3GPP TS 25.331, clause 8.4.1.3, 8.4.1.6a and 8.4.1.7.1

### 8.4.1.7.3 Test Purpose

- To confirm that UE retrieves stored measurement control information for intra-frequency measurement type with "measurement validity" assigned to "CELL\_DCH", after it enters CELL\_DCH state from CELL\_FACH state.
- To confirm that the UE continues to monitor the neighbouring cells listed "intra-frequency cell info" IE in the System Information Block type 11 or 12 messages, if no intra-frequency measurements applicable to CELL\_DCH are stored.
- To confirm that the UE transmits MEASUREMENT REPORT messages if reporting criteria stated in IE "intra-frequency measurement reporting criteria" in System Information Block type 11 or 12 messages are fulfilled.

- To confirm that a MEASUREMENT CONTROL message received in CELL\_DCH state overrides the measurement and associated reporting contexts maintained in the UE by virtue of System Information Block type 11 or 12 messages.
- To confirm that the UE delete all measurements of type intra-frequency upon cell reselection while in CELL\_FACH.

#### 8.4.1.7.4 Method of test

##### Initial Condition

System Simulator: 3 cells – Cell 1, cell 2 and cell 3 are active.

UE: PS-DCCH+DTCH\_FACH (state 6-11).

##### Test Procedure

Table 8.4.1.7-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1" are to be applied subsequently. The exact instants on which these values shall be applied are described in the text in this clause.

**Table 8.4.1.7-1**

Para-meter	Unit	Cell 1			Cell 2			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Ch. 1			Ch. 1			Ch. 1		
CPICH Ec	dBm /3.84 MHz	-60	-122	-122	-70	-60	-60	-75	-75	-60

The UE is brought to CELL\_FACH state in cell 1. (step 1) SS sends SYSTEM INFORMATION CHANGE INDICATION message to UE to inform UE of the modification in the system information.

SS sends a RADIO BEARER RECONFIGURATION message to UE (step2), and configures dedicated physical channels on both uplink and downlink directions. The UE shall move to CELL\_DCH state and then return RADIO BEARER RECONFIGURATION COMPLETE message (step3). The UE shall send a MEASUREMENT REPORT message containing IE "Measured results" to report cell 2's CPICH RSCP value and IE "event results" to report triggering of event type "1e" (step 4). After receiving the MEASUREMENT REPORT message, SS transmits a MEASUREMENT CONTROL message with only cell 3 included in the IE "intra-frequency cell info" (step 5). After receiving such a message, the UE shall transmit another set of MEASUREMENT REPORT message for measurement identity = 11. SS verifies that only measurement readings for cell 3 's CPICH RSCP are report in IE "cell measured results" in this message (step 6). Cell 3 shall also trigger event 1e for the measurement that the UE had stored from system information, so a MEASUREMENT REPORT message shall be received for measurement identity = 10 (step 6a) as well. The order of steps 6 and 6a is not important and could be reversed.

Next, SS sends a PHYSICAL CHANNEL RECONFIGURATION message (step 7). SS configures common physical channels for both the uplink and the downlink directions. The UE shall transit to CELL\_FACH state and then reply with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message (step 8). SS waits and checks the uplink RACH to confirm that no MEASUREMENT REPORT messages are received (step 9).

SS transmits then a RADIO BEARER RECONFIGURATION message to the UE, to move it to CELL\_DCH state (step 9a). The UE shall move to that state, and transmit a RADIO BEARER RECONFIGURATION COMPLETE message to SS (step 9b). Shortly after, a MEASUREMENT REPORT message shall be received that has been triggered by cell 2, i.e. the UE shall have deleted the measurement configured through the MEASUREMENT CONTROL message of step 5, and instead apply the measurement configured in SIB12: a MEASUREMENT REPORT message with measurement identity 10 shall be received while no such message with measurement identity 11 shall be sent by the UE (step 9c).

~~SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to move it to CELL\_FACH state once again (step 9d). The UE shall move to that state and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to SS (step 9e).~~ SS transmits MEASUREMENT CONTROL message on the downlink DCCH, to



configure intra-frequency measurements with validity CELL\_DCH (step 10). ~~SS waits, and verifies that no MEASUREMENT REPORT messages are detected on the uplink DCCH (step 11).~~

~~SS sends RADIO BEARER RECONFIGURATION message and configures dedicated physical channels (step 12). The UE shall return to CELL\_DCH state, transmit a RADIO BEARER RECONFIGURATION COMPLETE message (step 13).~~ The UE shall also send a MEASUREMENT REPORT message [\(with IE "Measurement identity" = 12\)](#) to the SS triggered by cell 2 (step 14).

SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to move it to CELL\_FACH state (step 14a). The UE shall move to that state and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to SS (step 14b). SS shall wait and check that no MEASUREMENT REPORT messages are detected on the uplink DCCH (step 14c).

SS transmits a RADIO BEARER RECONFIGURATION message to the UE, to move it to CELL\_DCH state (step 14d). The UE shall move to that state, and transmit a RADIO BEARER RECONFIGURATION COMPLETE message to SS (step 14e). Shortly after, a MEASUREMENT REPORT message shall be received that has been triggered by cell 2, i.e the UE shall have retrieved the measurement configured through the MEASUREMENT CONTROL message of step 10, instead of the ones that are broadcast in SIB12 (step 14f).

Following the reception of the MEASUREMENT REPORT message, SS commands the UE using MEASUREMENT CONTROL message to release measurement control information stored in "measurement identity" = 12 (step 15). Thereafter, SS verifies that no MEASUREMENT REPORT messages are detected on the uplink DCCH (step 16). After this requirement is satisfied, SS sends MEASUREMENT CONTROL on the downlink DCCH once more (step 17). This message is identical to the one sent in step 10 (see specific message content). A MEASUREMENT REPORT message shall be received from the UE triggered by cell 2 (step 17a).

SS transmits a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH and configures common physical channel (step 18). The UE shall transit to CELL\_FACH state and then respond with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message (step 19). SS monitors the uplink DCCH once more to verify that no MEASUREMENT REPORT messages are detected (step 20). SS modifies the downlink transmission power of the respect cells according to the settings in columns "T1" in table 8.4.1.7-1. System information block type 11 and System Information Block type 12 for cell 2 shall be different from the default settings according to what is defined in the specific message content part of this section (step 21). The UE shall initiate a cell re-selection procedure. This is verified in the SS when a CELL UPDATE message is received on the uplink CCCH with the "cell update cause" IE set to "cell reselection" (step 22). SS transmits a CELL UPDATE CONFIRM message, which includes "New C-RNTI", on the DCCH (step 23). Then the UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message (step 23a). Next, SS sends a RADIO BEARER RECONFIGURATION message on the downlink DCCH, assigning dedicated physical channels in both uplink and downlink directions (step 24). The UE shall respond with a RADIO BEARER RECONFIGURATION COMPLETE message and then return to CELL\_DCH state (step 25). SS modifies the downlink transmission power of all cells according to the settings in columns "T2" in table 8.4.1.7-1. UE shall then send MEASUREMENT REPORT messages reporting cell 3's CPICH RSCP according to the content in System Information Block type 12 messages broadcasted in cell 2 (step 21). [SS transmits a MEASUREMENT CONTROL message \(step 27\) whereby the measurement identity is set to the same value as that in the SIB type 12 messages \(step 21\). UE shall send MEASUREMENT REPORT message \(step 28\) reporting cell 3's CPICH RSCP according to the MEASUREMENT CONTROL message \(step 27\).](#)

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

## Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	System Information Block type 11 and 12	UE is initially in PS-DCCH+DTCH_FACH (state 6-11) in cell 1. System Information Block type 11 and 12 messages are changed with respect to the default contents according to the descriptions in "Specific Message Contents" clause.
1a		←	SYSTEM INFORMATION CHANGE INDICATION	
2		←	RADIO BEARER RECONFIGURATION	SS configures dedicated physical channels.
3		→	RADIO BEARER RECONFIGURATION COMPLETE	UE shall move to CELL_DCH state.
4		→	MEASUREMENT REPORT	Reports cell 2's CPICH RSCP measurement value, with "measurement identity" IE set to "10".
5		←	MEASUREMENT CONTROL	Cell 3 is added to the list of monitored set of the UE.
6		→	MEASUREMENT REPORT	Cell 3 shall trigger the event 1e configured in the measurement identity 11.
6a		→	MEASUREMENT REPORT	Cell 3 shall also trigger the event 1e configured in the measurement identity 10. The order of steps 6 and 6a could be reversed.
7		←	PHYSICAL CHANNEL RECONFIGURATION	SS configures PRACH and S-CCPCH physical channels.
8		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state.
9				SS waits and checks that no MEASUREMENT REPORT messages are sent by UE.
9a		←	RADIO BEARER RECONFIGURATION	SS configures dedicated physical channels.
9b		→	RADIO BEARER RECONFIGURATION COMPLETE	UE shall move to CELL_DCH state.
9c		→	MEASUREMENT REPORT	UE shall report cell 2's CPICH RSCP measurement value, with "measurement identity" IE set to "10".
9d		←	<del>PHYSICAL CHANNEL RECONFIGURATION</del> Void	<del>SS configures PRACH and S-CCPCH physical channels.</del>
9e		→	<del>PHYSICAL CHANNEL RECONFIGURATION COMPLETE</del> Void	<del>UE shall move to CELL_FACH state.</del>
10		←	MEASUREMENT CONTROL	SS instructs the UE to setup intra-frequency measurement and reporting for cell 2. Measurement validity" IE is set to CELL_DCH state.
11				<del>SS waits and verifies that no MEASUREMENT REPORT messages are sent by UE.</del>
12		←	<del>RADIO BEARER RECONFIGURATION</del> Void	<del>SS configures dedicated physical channels.</del>
13		→	<del>RADIO BEARER RECONFIGURATION COMPLETE</del> Void	<del>UE shall return to CELL_DCH state.</del>

Step	Direction		Message	Comment
	UE	SS		
14		→	MEASUREMENT REPORT	UE reports cell 2's measured results for CPICH RSCP, with <a href="#">"measurement identity" IE set to "12"</a> .
14a		←	PHYSICAL CHANNEL RECONFIGURATION	SS configures PRACH and S-CCPCH physical channels.
14b		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state.
14c				SS waits and check that no MEASUREMENT REPORT messages are sent by the UE.
14d		←	RADIO BEARER RECONFIGURATION	SS configures dedicated physical channels.
14e		→	RADIO BEARER RECONFIGURATION COMPLETE	UE shall move to CELL_DCH state.
14f		→	MEASUREMENT REPORT	UE shall have retrieved and resumed the measurement set up through the MEASUREMENT CONTROL of step 10. <a href="#">The "measurement identity" IE shall be set to "12"</a> .
15		←	MEASUREMENT CONTROL	Terminate all the intra-frequency measurement and reporting activities related to "measurement identity" = 12.
16				SS waits and verifies that UE stop transmitting MEASUREMENT REPORT messages.
17		←	MEASUREMENT CONTROL	This message is the same as in step 10.
17a		→	MEASUREMENT REPORT	UE shall transmit a MEASUREMENT REPORT message triggered by cell 2, with <a href="#">"measurement identity" IE set to "12"</a> .
18		←	PHYSICAL CHANNEL RECONFIGURATION	Allocates common physical channels.
19		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state.
20				SS checks that no MEASUREMENT REPORT messages are received.
21		←	System Information Block type 11 System Information Block type 12	SS reconfigures the downlink transmission power settings for cells 1 to 3 according to column "T1" in table 8.4.1.7. SS sends SIB11 and SIB12 with specific values to Cell2.
22		→	CELL UPDATE	UE shall re-selects to cell 2 and then perform a cell update procedure.
23		←	CELL UPDATE CONFIRM	UE shall stay in CELL_FACH state.
23a		→	UTRAN MOBILITY INFORMATION CONFIRM	
24		←	RADIO BEARER RECONFIGURATION	Dedicated physical channels are assigned to the UE in this message.
25		→	RADIO BEARER RECONFIGURATION COMPLETE	UE shall return to CELL_DCH state. <a href="#">UE shall not send Measurement Report message with "measurement identity" = '12'</a> .

Step	Direction		Message	Comment
	UE	SS		
25a				SS reconfigures the downlink transmission power settings of all cells according to column "T2" in table 8.4.1.7-1.
26		→	MEASUREMENT REPORT	UE begins to report cell 3's measured results for CPICH RSCP, with "measurement identity" IE set to "1".
27		←	MEASUREMENT CONTROL	
28		→	MEASUREMENT REPORT	UE shall transmit a MEASUREMENT REPORT message triggered by cell 3, with "measurement identity" IE set to "1".

Specific Message Content

Master Information Block (Step 1)

Information Element	Value/Remarks
MIB Value Tag	3

System Information Block type 11 for cell 1 (Step 1)

Information Element	Value/remark
SIB12 indicator	TRUE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH Ec/No
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not present
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS34.108
- Primary CPICH Tx power	Not present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not present
- Cells for measurement	Not present
- Intra-frequency measurement quantity	Not present
- Intra-frequency reporting quantity for RACH	Not present
reporting	
- Maximum number of reported cells on RACH	Not present
- Reporting information for state CELL_DCH	Not present
- Inter-frequency measurement system information	Not present
- Inter-RAT measurement system information	Not present
- Traffic volume measurement system information	Not Present

## System Information Block type 12 for cell 1 (Step 1)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH Ec/No
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	10
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not present
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not Present
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	Not present
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity for RACH reporting	Not present
- Maximum number of reported cells on RACH	No report
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged mode RLC
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameter required for each event	
- Intra-frequency event identity	1e
- Triggering condition 1	Not present
- Triggering condition 2	Monitored set cells
- Reporting range constant	Not present
- Cells forbidden to affect reporting range	Not present
- W	Not present
- Hysteresis	0 dB
- Threshold used frequency	-80 dBm
- Reporting deactivation threshold	Not present
- Replacement activation threshold	Not present
- Time to trigger	0
- Amount of reporting	Not Present

- Reporting Interval	Not Present
- Reporting cell status	Report cells within monitored set cells on used frequency
- CHOICE reported cells	1
- Maximum number of reported cells	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

SYSTEM INFORMATION CHANGE INDICATION (Step 1a)

Information Element	Value/Remarks
BCCH modification info	3
- MIB Value Tag	Not Present
- BCCH modification time	

RADIO BEARER RECONFIGURATION (Step 2, Step 9a, ~~Step 12~~, Step 14d and Step 24)

Use the same message type found in Annex A, with condition set to A4.

MEASUREMENT REPORT (Steps 4 and 9c)

Information Element	Value/remark
Measurement identity	Check to see if set to 10
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 2

## MEASUREMENT CONTROL (Step 5)

Information Element	Value/remark
Measurement Identity	11
Measurement Command	Setup
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Event Trigger
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	Intra-frequency measurement
CHOICE measurement type	Remove no intra-frequency cells
- Intra-frequency cell info list	3
- CHOICE intra-frequency cell removal	0 dB
- New intra-frequency info list	Not Present
- Intra-frequency cell id	FALSE
- Cell info	FDD
- Cell individual offset	Set to same code as used for cell 3
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	Not Present
- Primary Scrambling Code	FALSE
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells selection and Re-selection info	Not Present
- Cells for measurement	3
- Intra-frequency cell id	Not Present
- Intra-frequency measurement quantity	CPICH RSCP
- Filter Coefficient	Not Present
- Measurement quantity	FALSE
- Intra-frequency reporting quantity	FALSE
- Reporting quantities for active set cells	FALSE
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	FALSE
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	TRUE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement criteria
- Parameters required for each event	1e
- Intra-frequency event identity	Not Present
- Triggering condition 1	Monitored set cells
- Triggering condition 2	Not Present
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	Not Present
- CHOICE Mode	FDD
- Primary CPICH Info	Set to the same scrambling code for cell 3
- Primary Scrambling Code	Not Present
- W	0 dB
- Hysteresis	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Threshold used frequency	-90 dBm
- Time to Trigger	0
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	Report cells within monitored set cells on used frequency
- CHOICE reported cells	

- Maximum number of reported cells DPCH compressed mode status info	1 Not Present
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MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
Measurement identity	Check to see if set to 11
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	Check to see if this IE is absent
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 3

MEASUREMENT REPORT (Step 6a)

Information Element	Value/remark
Measurement identity	Check to see if set to 10
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 3

PHYSICAL CHANNEL RECONFIGURATION (Steps 7, ~~9d~~, 14a and 18)

Use the same message sub-type found in clause 9 of TS 34.108, which is entitled "Packet to CELL\_FACH from CELL\_DCH in PS".



## MEASUREMENT CONTROL (Steps 10 and 17)

Information Element	Value/remark
Measurement Identity	12
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra- frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info list	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not Present
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	
- UE state	CELL_DCH
- CHOICE report criteria	Intra-frequency measurement criteria
- Parameters required for each event	
- Intra-frequency event identity	1e
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	Not Present
- Primary CPICH Info	
- Primary Scrambling Code	Set to the same scrambling code for cell 2
- W	Not Present
- Hysteresis	0 dB
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Threshold Used Frequency	-80 dBm
- Time to Trigger	0
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cell	Report cells within monitored set cells on used frequency
- Maximum number of reported cells	1

DPCH compressed mode status info	Not Present
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## MEASUREMENT REPORT (Steps 14, 14f and 17a)

Information Element	Value/remark
Measurement identity	Check to see if set to 12
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	
Additional measured results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 2

## MEASUREMENT CONTROL (Step 15)

Information Element	Value/remark
Measurement Identity	12
Measurement Command	Release
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE Measurement type	Not Present
DPCH compressed mode status info	Not Present

## System Information Block type 11 for cell 2 (Step 21)

Information Element	Value/Remark
SIB12 indicator	TRUE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH Ec/No
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4
- Primary CPICH Tx power	Not present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not present
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
- Primary CPICH Tx power	Not present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not present
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
- Primary CPICH Tx power	Not present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not present
- Cells for measurement	Not present
- Intra-frequency measurement quantity	
- Filter coefficient	Not Present
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity for RACH reporting	Not present
- Maximum number of reported cells on RACH	Not present
- Reporting information for state CELL_DCH	Not present
- Inter-frequency measurement system information	Not present
- Inter-RAT measurement system information	Not present
- Traffic volume measurement system information	Not Present

## System Information Block type 12 for cell 2 (Step 21)

Information Element	Value/Remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH Ec/No
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	Not Present
- Intra-frequency measurement quantity	
- Filter coefficient	Not Present
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity for RACH reporting	Not present
- Maximum number of reported cells on RACH	Not present
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	TRUE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected set cells	Not Present
- Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Intra-frequency event identity	1a
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	5dB
- Cells forbidden to affect Reporting range	Not Present
- W	0
- Hysteresis	0.0
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	2
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Inter-frequency measurement system information	Not present
- Inter-RAT measurement system information	Not present
- Traffic volume measurement system information	Not Present
- UE internal measurement system information	Not Present

## CELL UPDATE (Step 22)

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Cell Re-selection'
Protocol error indicator	Check to see if it is absent or set to 'FALSE'
Measured results on RACH	Check to see if it is absent
Protocol error information	Check to see if it is absent

## CELL UPDATE CONFIRM (Step 23)

Use the default message content of the same message type in Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

## UTRAN MOBILITY INFORMATION CONFIRM (Step 23a)

Only the message type is checked.

MEASUREMENT REPORT (Step 26)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is present
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is present
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1a'
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 3

MEASUREMENT CONTROL (Step 27)

Information Element	Value/remark
<a href="#">Measurement Identity</a>	<a href="#">1</a>
<a href="#">Measurement Command</a>	<a href="#">Setup</a>
<a href="#">Measurement Reporting Mode</a>	
- <a href="#">Measurement Reporting Transfer Mode</a>	<a href="#">Acknowledged Mode RLC</a>
- <a href="#">Periodic Reporting / Event Trigger Reporting Mode</a>	<a href="#">Event Trigger</a>
<a href="#">Additional measurements list</a>	<a href="#">Not Present</a>
<a href="#">CHOICE measurement type</a>	<a href="#">Intra-frequency measurement</a>
- <a href="#">Intra-frequency cell info list</a>	
- <a href="#">CHOICE intra-frequency cell removal</a>	<a href="#">Remove no intra-frequency cells</a>
- <a href="#">New intra-frequency info list</a>	<a href="#">Not present</a>
- <a href="#">Cells for measurement</a>	
- <a href="#">Intra-frequency cell id</a>	<a href="#">3</a>
- <a href="#">Intra-frequency measurement quantity</a>	
- <a href="#">Filter Coefficient</a>	<a href="#">Not Present</a>
- <a href="#">Measurement quantity</a>	<a href="#">CPICH RSCP</a>
- <a href="#">Intra-frequency reporting quantity</a>	
- <a href="#">Reporting quantities for active set cells</a>	
- <a href="#">Cell synchronisation information reporting indicator</a>	<a href="#">FALSE</a>
- <a href="#">Cell identity reporting indicator</a>	<a href="#">FALSE</a>
- <a href="#">CPICH Ec/No reporting indicator</a>	<a href="#">FALSE</a>
- <a href="#">CPICH RSCP reporting indicator</a>	<a href="#">FALSE</a>
- <a href="#">Pathloss reporting indicator</a>	<a href="#">FALSE</a>
- <a href="#">Reporting quantities for monitored set cells</a>	

- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement criteria
- Parameters required for each event	
- Intra-frequency event identity	1e
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	Not Present
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to the same scrambling code for cell 3
- W	Not Present
- Hysteresis	0 dB
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Threshold used frequency	-90 dBm
- Time to Trigger	0
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set cells on used frequency
- Maximum number of reported cells	1
DPCH compressed mode status info	Not Present

**MEASUREMENT REPORT (Step 28)**

<b>Information Element</b>	<b>Value/remark</b>
<u>Measurement identity</u>	Check to see if set to 1
<u>Measured Results</u>	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
<u>Measured Results on RACH</u>	Check to see if this IE is absent
<u>Additional measured results</u>	Check to see if this IE is absent
<u>Event Results</u>	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 3

8.4.1.7.5 Test Requirement

After step 3 the UE shall report cell 2's CPICH RSCP value by transmitting MEASUREMENT REPORT messages.

After step 5 the UE shall transmit two MEASUREMENT REPORT messages which contain measured results of cell 3's CPICH RSCP value only, one for measurement identity 10 and one for measurement identity 11.

After step 9 and step 11 the UE shall not transmit MEASUREMENT REPORT messages, which pertain to intra-frequency type measurement reporting.

After step 9b, the UE shall transmit a MEASUREMENT REPORT according to what is broadcast in SIB 11 and 12 of cell 1, and MEASUREMENT REPORT message pertaining to the MEASUREMENT CONTROL message that it had received in step 5.

After steps 13 and 14e, the UE shall resume the measurement and reporting activities as specified in MEASUREMENT CONTROL message received in step 10. The UE shall transmit MEASUREMENT REPORT messages, containing measured results of cell 2's CPICH RSCP value.

After step 15 the UE shall stop measurement activities pertaining to periodic reporting of cell 2's CPICH RSCP, no MEASUREMENT REPORT messages shall be detectable by the SS on the uplink DCCH.

After step 17, the UE shall transmit a MEASUREMENT REPORT message to the SS as specified in the MEASUREMENT CONTROL message received in step 17.

After step 21 the UE shall re-select to cell 2 and initiate a cell update procedure. SS shall receive a CELL UPDATE message on the uplink CCCH of cell 2, with the "cell update cause" IE stated as "cell re-selection".

After step 23, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH AM RLC.

After step 25, UE shall not send MEASUREMENT REPORT message with "measurement identity" = '12'.

After step 25a the UE shall report cell 3's CPICH RSCP value by transmitting MEASUREMENT REPORT messages.

After step 27, UE shall send MEASUREMENT REPORT message with "measurement identity" = '1'.



## CHANGE REQUEST

⌘ **34.123-1 CR 601** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ CR to 34.123-1 REL-5; New RLC test case on reconfiguration of RLC parameters by upper layers		
<b>Source:</b>	⌘ Ericsson		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 6/11/2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ REL-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ The detection of periodic RLC STATUS PDU transmission after an RRC Radio bearer reconfiguration procedure was removed from the RRC test cases, since the test environment for RRC test cases in the SS is not capable of verifying that the UE transmits the RLC STATUS PDUs. To keep the same test coverage, it was suggested at T1#20 that we add an RLC test case.  To accomplish even better test coverage, the proposed test case would have the purpose of verifying a reconfiguration of RLC parameters in general, not only the start of periodic RLC STATUS PDU transmission.
<b>Summary of change:</b>	⌘ A new test case 7.2.3.35 is added.  A radio bearer is established with default parameters. Then, a RADIO BEARER RECONFIGURATION RRC message is used to modify the RLC configuration. The SS verifies that the UE uses the new RLC configuration.
<b>Consequences if not approved:</b>	⌘ Insufficient test coverage.

<b>Clauses affected:</b>	⌘ 7.2.3.35 (new)										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">⌘</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	⌘	X	X	⌘	⌘	X	⌘	34.123-2
Y	N										
⌘	X										
X	⌘										
⌘	X										
<b>Other comments:</b>	⌘ Affects REL-5, REL-4 and R99.										

### **How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

### 7.2.3.35 Reconfiguration of RLC parameters by upper layers

#### 7.2.3.35.1 Definition

This case verifies the UE behaviour after a reconfiguration of RLC parameters on an established RLC AM entity.

#### 7.2.3.35.2 Conformance requirement

Upon reception of the IE "RLC Info", the UE shall:

1> configure the transmitting and receiving RLC entities in the UE for that radio bearer accordingly;

1> if the IE "Polling info" is present in the IE "RLC info":

2> for each present IE in the IE "Polling info":

3> configure RLC to use the corresponding function according to the value of the IE.

2> for each absent IE in the IE "Polling info":

3> configure RLC to not use the corresponding function.

1> if the IE "Polling info" is absent:

2> configure RLC to not use the polling functionality.

1> if the IE "Downlink RLC STATUS info" is present in the IE "RLC info" (this IE is present for AM RLC):

2> for each present IE in the IE "Downlink RLC STATUS info":

3> configure RLC to use the corresponding function according to value of the IE.

#### a) Timer Poll.

This timer shall only be used when so configured by upper layers. The value of the timer is signalled by upper layers. In the UE this timer shall be started when the successful or unsuccessful transmission of an AMD PDU containing a poll is indicated by lower layer.

#### f) Timer Status Prohibit.

This timer shall only be used when so configured by upper layers. It is meant to prohibit the Receiver from sending consecutive acknowledgement status reports. A status report is an acknowledgement status report if it contains any of the SUFIs LIST, BITMAP, RLIST or ACK. The value of the timer is signalled by upper layers.

In the UE, this timer shall be started when the successful or unsuccessful transmission of the last STATUS PDU of an acknowledgement status report is indicated by lower layer.

#### Reference

TS 25.331 clause 8.6.4.9, 25.322 clause 9.5.

#### 7.2.3.35.3 Test purpose

To verify that the UE starts to use the new set of RLC parameters when an already established AM RLC radio bearer is reconfigured.

#### 7.2.3.35.4 Method of test

#### Initial conditions

The generic procedure for Radio Bearer establishment (clause 7.1.3 of TS 34.108) is executed, with all the parameters as specified in the procedure, with the exception that the default Radio Access Bearer is replaced with the RAB defined for AM 7-bit "Length Indicator" tests in clause 7.2.3.1.

The Radio Bearer is placed in UE test loop mode 1 with the UL SDU size set to  $(2 * AM\_7\_PayloadSize) - 1$  bytes.

Test procedure

- a) After establishing the radio bearer with default settings, SS reconfigures RLC parameters for an AM RLC entity by sending a RADIO BEARER RECONFIGURATION RRC message to the UE.
- b) Let  $T_{poll}$  be the value of the Timer Poll Periodic timer,  $T_{pro}$  the value of the Timer Status Prohibit timer, and  $T_{per}$  the value of the Timer Status Periodic timer.
- c) The SS transmits at least  $2 * T_{poll} / TTI$  SDUs of size  $AM\_7\_PayloadSize - 1$  bytes.
- d) Whilst transmitting, the SS monitors the uplink for a STATUS PDU and notes the time. This time will be recorded as  $T_1$ .
- e) The SS sets the P bit in one of the next  $\text{floor}(T_{pro} / TTI)$  PDUs transmitted on the downlink.
- f) The SS waits to receive a second STATUS PDU and notes the time. This time will be recorded as  $T_2$ .
- g) The SS receives PDUs from the UE, and notes the time on receiving the first PDU with the P bit set, but does not respond. This time will be recorded as  $T_3$ .
- h) The SS continues to receive PDUs from the UE and notes the time on receipt of the next PDU with the P bit set. This time will be recorded as  $T_4$ .
- i) The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	RRC
2		→	RADIO BEARER RECONFIGURATION COMPLETE	RRC
3		←	DOWNLINK RLC PDU	SDU 1
4		←	...	SS continues to transmit RLC SDUs
5		←	DOWNLINK RLC PDU	SDU m
6		→	STATUS PDU	Note $T_1$
7		←	DOWNLINK RLC PDU	Poll
8		←	...	SS continues to transmit RLC PDUs
9		←	DOWNLINK RLC PDU	SDU $m + \text{ceil}(T_{pro} / TTI)$
10		→	STATUS PDU	Note $T_2$
11		←	DOWNLINK RLC PDU	SDU $\text{ceil}(2T_{poll} / TTI)$
12		→	UPLINK RLC PDU	SDU 1
13		→	UPLINK RLC PDU	SDU 2
14		→	...	SS continues to receive RLC PDUs
15		→	UPLINK RLC PDU	$SN = \text{ceil}(T_{poll} / TTI)$ , First Poll: Note $T_3$
16		→	UPLINK RLC PDU	$SN = \text{ceil}(T_{poll} / TTI) + 1$
17		→	...	SS continues to receive RLC PDUs
18		→	UPLINK RLC PDU	Second Poll: Note $T_4$
19			RB RELEASE	Optional step

NOTE 1: The Expected Sequence shown is informative.  
The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.  
Information such as SDU, PDU or Sequence numbers given in the comments column shall be considered informative only, for test case development purposes.

Specific message contentsRADIO BEARER RECONFIGURATION (step 1)

The default RADIO BEARER RECONFIGURATION message as defined in TS 34.108 is used, except for the following:

<u>RB information to reconfigure list</u>	
<u>- RB information to reconfigure</u>	
<u>- RB identity</u>	
<u>- Downlink RLC Info</u>	
<u>- Timer_Status_Prohibit</u>	<u>500</u>
<u>- Timer_STATUS_periodic</u>	<u>200</u>
<u>- Uplink RLC Info</u>	
<u>- Polling info</u>	
<u>- Last retransmission PDU poll</u>	<u>FALSE</u>
<u>- Last transmission PDU poll</u>	<u>FALSE</u>
<u>- Timer_poll</u>	<u>600</u>
<u>- Timer_Poll_Periodic</u>	<u>1000</u>

Refererring to the radio bearer defined for AM 7-bit "Length Indicator" tests in clause 7.2.3.1.

7.2.3.35.5 Test requirements

The measured time  $T_2 - T_1$  shall be 500 ms.

The measured time  $T_4 - T_3$  shall be 600 ms.

## CHANGE REQUEST

# **34.123-1 CR 604** # rev **1** # Current version: **5.5.0** #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	# CR to 34.123-1 REL-5; Introduction of test cases on A-GPS positioning		
<b>Source:</b>	# Ericsson		
<b>Work item code:</b>	# TEI	<b>Date:</b>	# 5/11/2003
<b>Category:</b>	# <b>F</b>	<b>Release:</b>	# REL-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	# There are no positioning test cases. In this CR, two new test cases are proposed for A-GPS based positioning.
<b>Summary of change:</b>	# Clause 17 is renamed into "Specific features".  A new subclause, 17.2, is introduced for "Location Services".  "Default conditions during LCS tests" is added as subclause 17.2.1.  Three subclauses are added, to hold test cases: 17.2.2 Assisted GPS Network Induced Tests 17.2.3 Assisted GPS Mobile Originated Tests 17.2.4 Assisted GPS Mobile Terminated Tests  Two test cases are added, leaving the details of those FFS:  <u>17.2.2.1 LCS Network Induced location request/ UE-Based GPS/ Emergency Call / with USIM / Limited Assistance Data</u>  <u>17.2.3.1 LCS Mobile originated location request/ UE-Based GPS/ Assistance data sent in multiple measurement control messages</u>
<b>Consequences if not approved:</b>	# No test coverage for A-GPS based positioning in these scenarios.

<b>Clauses affected:</b>	⌘	17 (renamed), 17.2 (new)										
<b>Other specs affected:</b>	⌘	<table border="1"><tr><td>Y</td><td>N</td></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr><tr><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr></table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘ TS 34.123-2
		Y	N									
		<input type="checkbox"/>	<input checked="" type="checkbox"/>									
<input checked="" type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input checked="" type="checkbox"/>											
<input checked="" type="checkbox"/>	Test specifications											
<input type="checkbox"/>	O&M Specifications											
<b>Other comments:</b>	⌘	Affects REL-5, REL-4 and R99.										

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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## 17 ~~User Equipment~~Specific features (~~MMI, VHE, MexE, SAT~~)

### 17.1 Test of autocalling restrictions

....

#### 17.1.4.5 Test requirements

The UE must not initiate a call.

## 17.2 Location Services

This subclause contains test cases for Location Services (LCS).

### 17.2.1 Default conditions during LCS tests

#### 17.2.1.1 Default system information

Default system information, as specified in TS 34.108 subclause 6.1, is broadcasted. SIB15/SIB15.x are not broadcasted unless otherwise stated in the specific test cases.

#### 17.2.1.2 Simulated A-GPS environment

FFS.

### 17.2.2 Assisted GPS Network Induced Tests

#### 17.2.2.1 LCS Network Induced location request/ UE-Based GPS/ Emergency Call / with USIM / Limited Assistance Data

FFS.

### 17.2.3 Assisted GPS Mobile Originated Tests

#### 17.2.3.1 LCS Mobile originated location request/ UE-Based GPS/ Assistance data sent in multiple measurement control messages

FFS.

### 17.2.4 Assisted GPS Mobile Terminated Tests



CR-Form-v7

## CHANGE REQUEST

⌘ **34.123-1 CR 598** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ CR to TS 34.123-1 [REL-5] Package 2 Idle Mode test case 6.2.1.1 Selection of the correct PLMN and associated RAT, 6.2.1.6 Selection of RAT for HPLMN: Automatic mode; 6.2.1.7 Selection of RAT for UPLMN: Automatic mode; 6.2.1.8 Selection of RAT for OPLMN: Automatic mode. (Revision of T1-031369)		
<b>Source:</b>	⌘ Anite Telecoms		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 05/11/03
<b>Category:</b>	⌘ F	<b>Release:</b>	⌘ REL-5

<b>Reason for change:</b>	⌘ As stated in the conformance requirement for these tests "this version of the specification does not support multiple HPLMN codes and the "HPLMN Selector with Access Technology" data field is only used by the MS to get the HPLMN access technologies. The HPLMN code is the PLMN code included in the IMSI." Therefore correct PLMN selection requires the USIM to have the appropriate PLMN code.
<b>Summary of change:</b>	⌘ The IMSI is set to the required PLMN code for each USIM inserted.
<b>Consequences if not approved:</b>	⌘ The UE will not behave in the expected manner.

<b>Clauses affected:</b>	⌘ 6.2.1.1; 6.2.1.6; 6.2.1.7; 6.2.1.8						
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="text-align: center; padding: 2px;">X</td> <td style="padding: 2px;"></td> </tr> </table>	Y	N	X		Other core specifications	⌘
	Y	N					
	X						
X	Test specifications	⌘					
X	O&M Specifications	⌘					
<b>Other comments:</b>	⌘ Affects R99, Rel-4 and Rel-5 test cases.						

### How to create CRs using this form:

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## 6.2 Multi-mode environment (2G/3G case)

### 6.2.1 PLMN and RAT selection

#### 6.2.1.1 Selection of the correct PLMN and associated RAT

##### 6.2.1.1.1 Definition

Test to verify that the UE selects the correct combination of PLMN and associated access technology according to the fields on the USIM.

##### 6.2.1.1.2 Conformance requirement

1. At switch on, or following recovery from lack of coverage, the MS selects the registered PLMN or equivalent PLMN (if it is available) using all access technologies that the MS is capable of and if necessary (in the case of recovery from lack of coverage, see TS 23.122, clause 4.5.2) attempts to perform a Location Registration.

If successful registration is achieved, the MS indicates the selected PLMN.

If there is no registered PLMN, or if registration is not possible due to the PLMN being unavailable or registration failure, the MS follows either Automatic or Manual Network Selection Mode Procedure depending on its operating mode.

2. The "HPLMN Selector with Access Technology", "User Controlled PLMN Selector with Access Technology" and "Operator Controlled PLMN Selector with Access Technology" data fields in the SIM include associated access technologies for each PLMN entry. The PLMN/access technology combinations are listed in priority order. If an entry includes more than one access technology, then no priority is defined for the preferred access technology and the priority is an implementation issue.
3. To allow provision for multiple HPLMN codes, the HPLMN access technologies are stored on the SIM together with PLMN codes. This version of the specification does not support multiple HPLMN codes and the "HPLMN Selector with Access Technology" data field is only used by the MS to get the HPLMN access technologies. The HPLMN code is the PLMN code included in the IMSI.
4. Automatic Network Selection Mode Procedure:

The MS selects and attempts registration on other PLMNs, if available and allowable in the following order:

- 4.1 HPLMN (if not previously selected);
- 4.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);
- 4.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);
- 4.4 Other PLMN/access technology combinations with received high quality signal in random order;
- 4.5 Other PLMN/access technology combinations in order of decreasing signal quality.

#### References

1. TS 23.122, clause 4.4.3.1.
2. TS 23.122, clause 4.4.3
3. TS 23.122, clause 4.4.3

4. TS 23.122, clause 4.4.3.1.1

NOTE: TS 31.102 defines the USIM fields.

#### 6.2.1.1.3 Test purpose

1. To verify that the UE selects the correct combination of HPLMN/access technology combination according to the fields on the USIM.

#### 6.2.1.1.4 Method of test

##### Initial conditions

The UE is in automatic PLMN selection mode.

Cell levels are from tables 6.3 and 6.4.

Cell	CPICH_Ec / RF signal level [dBm/3.84 MHz]	P-CCPCH_RSCP/ RF signal level [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-48	-48	1	PLMN 1	GSM
Cell 2	-70	-59	1	PLMN 1	UTRAN
Cell 3	-75	-64	2	PLMN 2	UTRAN
Cell 4	-50	-50	2	PLMN 2	GSM

The UE is equipped with a USIM containing default values except for those listed below.

##### USIM A

USIM field	Priority	PLMN	Access Technology Identifier
EF <sub>LOCI</sub>			
EF <sub>HPLMNwAcT</sub>	1 <sup>st</sup>	PLMN 1	GSM
	2 <sup>nd</sup>	PLMN 1	UTRAN

[The HPLMN \(MCC+MNC\) of the IMSI for USIM A is set to PLMN1.](#)

##### USIM B

USIM field	Priority	PLMN	Access Technology Identifier
EF <sub>LOCI</sub>			
EF <sub>HPLMNwAcT</sub>	1 <sup>st</sup>	PLMN 2	UTRAN
	2 <sup>nd</sup>	PLMN 2	GSM

[The HPLMN \(MCC+MNC\) of the IMSI for USIM B is set to PLMN2.](#)

##### Test procedure

Method C is applied.

- a) The SS activates cells 1-4 and monitors the cells for random access requests from the UE. The UE shall have a USIM with settings according to USIM A.
- b) The UE is switched on.
- c) The SS waits for random access requests from the UE.
- d) The UE is switched off and a USIM with settings according to USIM B is inserted.
- e) The UE is switched on.
- f) The SS waits for random access requests from the UE.

#### 6.2.1.1.5 Test Requirements

- 1) In step c), the response from the UE shall be on Cell 1. The displayed PLMN shall be PLMN1 (GSM).
- 2) In step f), the response from the UE shall be on Cell 3. The displayed PLMN shall be PLMN2 (UTRAN).

.....

## 6.2.1.6 Selection of RAT for HPLMN; Automatic mode

### 6.2.1.6.1 Definition

Test to verify that the UE selects the HPLMN RAT according to the HPLMN RAT priority list on the USIM. If no RAT on the list is available, the UE shall try to obtain registration on the same PLMN using other UE-supported RATs.

### 6.2.1.6.2 Conformance requirement

1. To allow provision for multiple HPLMN codes, the HPLMN access technologies are stored on the SIM together with PLMN codes. This version of the specification does not support multiple HPLMN codes and the "HPLMN Selector with Access Technology" data field is only used by the MS to get the HPLMN access technologies. The HPLMN code is the PLMN code included in the IMSI.
2. The "HPLMN Selector with Access Technology", "User Controlled PLMN Selector with Access Technology" and "Operator Controlled PLMN Selector with Access Technology" data fields in the SIM include associated access technologies for each PLMN entry. The PLMN/access technology combinations are listed in priority order. If an entry includes more than one access technology, then no priority is defined for the preferred access technology and the priority is an implementation issue.
3. Automatic Network Selection Mode Procedure:

The MS selects and attempts registration on other PLMNs, if available and allowable in the following order:

- 3.1 HPLMN (if not previously selected);
- 3.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);
- 3.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);
- 3.4 Other PLMN/access technology combinations with received high quality signal in random order;
- 3.5 Other PLMN/access technology combinations in order of decreasing signal quality.

If successful registration is achieved, the MS indicates the selected PLMN.

If registration cannot be achieved because no PLMNs are available and allowable, the MS indicates "no service" to the user, waits until a new PLMN is available and allowable and then repeats the procedure.

If there were one or more PLMNs which were available and allowable, but an LR failure made registration on those PLMNs unsuccessful or an entry in the "forbidden LAs for regional provision of service" list prevented a registration attempt, the MS selects the first such PLMN again and enters a limited service state.

## References

1. TS 23.122, clause 4.4.3.
2. TS 23.122, clause 4.4.3.
3. TS 23.122, clause 4.4.3.1.1.

NOTE: TS 31.102 defines the USIM fields.

### 6.2.1.6.3 Test purpose

1. To verify that:
  - 1.1 the UE searches for a HPLMN RAT according to the HPLMN Selector with Access Technology data field on the USIM in priority order.

1.2 If no RAT on the priority list is available, the UE tries to obtain registration on the same PLMN using other UE-supported RATs.

#### 6.2.1.6.4 Method of test

##### Initial conditions

The UE is in automatic PLMN selection mode.

Cell levels are from tables 6.3 and 6.4.

Cell	CPICH_Ec / RF signal level [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP / RF signal level [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-70	-59	1	PLMN 2	UTRAN
Cell 2	-48	-48	1	PLMN 2	GSM
Cell 3	-75	-64	2	PLMN 3	UTRAN
Cell 4	-50	-50	2	PLMN 3	GSM

The UE is equipped with a USIM containing default values except for those listed below.

##### USIM A

USIM field	Priority	PLMN	Access Technology Identifier
EF <sub>LOCI</sub>		PLMN 1	
EF <sub>HPLMNwAcT</sub>	1 <sup>st</sup>	PLMN 2	UTRAN
	2 <sup>nd</sup>	PLMN 2	GSM

[The HPLMN \(MCC+MNC\) of the IMSI for USIM A is set to PLMN2.](#)

##### USIM B

USIM field	Priority	PLMN	Access Technology Identifier
EF <sub>LOCI</sub>		PLMN 1	
EF <sub>HPLMNwAcT</sub>	1 <sup>st</sup>	PLMN 2	UTRAN
	2 <sup>nd</sup>		

[The HPLMN \(MCC+MNC\) of the IMSI for USIM B is set to PLMN2.](#)

##### Test procedure

Method C is applied.

- The SS activates cells 1-4 and monitors the cells for random access requests from the UE. The UE shall have a USIM with settings according to USIM A.
- The UE is switched on.
- The SS waits for random access requests from the UE.
- The UE is switched off and a USIM with settings according to USIM A is again inserted. All cells except Cell 1 are active.
- The SS waits for random access requests from the UE.

- f) The UE is switched off and a USIM with settings according to USIM B is inserted. All cells except Cell 1 are active.
- g) The UE is switched on.
- h) The SS waits for random access requests from the UE.

#### 6.2.1.6.5 Test Requirements

- 1) In step c), the response from the UE shall be on Cell 1 (1<sup>st</sup> priority RAT for  $EF_{HPLMNwAcT}$ ). The displayed PLMN shall be PLMN2 (UTRAN).
- 2) In step e), the response from the UE shall be on Cell 2 (2<sup>nd</sup> priority RAT for  $EF_{HPLMNwAcT}$ ). The displayed PLMN shall be PLMN2 (GSM).
- 3) In step h), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN2 (GSM). (PLMN2 is not available on UTRAN so registration on the same PLMN is attempted using other UE-supported RATs).

### 6.2.1.7 Selection of RAT for UPLMN; Automatic mode

#### 6.2.1.7.1 Definition

Test to verify that the UE selects the UPLMN RAT according to the UPLMN RAT priority list on the USIM. If no PLMN/RAT on the UPLMN RAT priority list is available then the UE shall search for PLMNs in the OPLMN list.

#### 6.2.1.7.2 Conformance requirement

- 1. Automatic Network Selection Mode Procedure:

The MS selects and attempts registration on other PLMNs, if available and allowable in the following order:

1.1 HPLMN (if not previously selected);

1.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

1.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

1.4 Other PLMN/access technology combinations with received high quality signal in random order;

1.5 Other PLMN/access technology combinations in order of decreasing signal quality.

If successful registration is achieved, the MS indicates the selected PLMN.

If registration cannot be achieved because no PLMNs are available and allowable, the MS indicates "no service" to the user, waits until a new PLMN is available and allowable and then repeats the procedure.

If there were one or more PLMNs which were available and allowable, but an LR failure made registration on those PLMNs unsuccessful or an entry in the "forbidden LAs for regional provision of service" list prevented a registration attempt, the MS selects the first such PLMN again and enters a limited service state.

#### References

- 1. TS 23.122, clause 4.4.3.1.1.

NOTE: TS 31.102 defines the USIM fields.

#### 6.2.1.7.3 Test purpose

- 1. To verify that:



1.1 the UE selects the UPLMN RAT according to the UPLMN RAT priority list on the USIM.

1.2 If no PLMN/RAT on the UPLMN RAT priority list is available, the UE searches for PLMNs in the OPLMN list.

#### 6.2.1.7.4 Method of test

##### Initial conditions

The UE is in automatic PLMN selection mode.

Cell levels are from tables 6.3 and 6.4.

In system information broadcast in each cell, the neighbouring cell list does not contain any other cell belonging to the same PLMN.

Cell	CPICH_Ec / RF signal level [dBm/3.84 MHz] (FDD)	P-CCPCH / RF signal level [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-70	-59	1	PLMN 3	UTRAN
Cell 2	-48	-48	1	PLMN 3	GSM
Cell 3	-75	-64	2	PLMN 4	UTRAN
Cell 4	-50	-50	2	PLMN 4	GSM
Cell 5	-80	-69	3	PLMN 5	UTRAN

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN	Access Technology Identifier
EF <sub>LOCI</sub>		PLMN 1	
EF <sub>HPLMNwAcT</sub>	1 <sup>st</sup>	PLMN 2	UTRAN
	2 <sup>nd</sup>	PLMN 2	GSM
EF <sub>PLMNwAcT</sub>	1 <sup>st</sup>	PLMN 3	UTRAN
	2 <sup>nd</sup>	PLMN 4	GSM
EF <sub>OPLMNwAcT</sub>	1 <sup>st</sup>	PLMN 5	UTRAN
	2 <sup>nd</sup>	PLMN 6	GSM

[The HPLMN \(MCC+MNC\) of the IMSI for the USIM is set to PLMN2.](#)

##### Test procedure

Method C is applied.

- The SS activates cells 1-5 and monitors the cells for random access requests from the UE.
- The UE is switched on.
- The SS waits for random access requests from the UE. As no cell exists for neither registered PLMN (PLMN1) nor home PLMN/RAT (PLMN2, UTRAN or GSM) the UE shall select Cell 1 (1<sup>st</sup> priority PLMN/RAT in EF<sub>PLMNwAcT</sub>).
- Cell 1 and Cell 2 are switched off. See note.
- The SS waits for random access requests from the UE. As no cell exists for neither registered PLMN (PLMN3 registered at step c), home PLMN (PLMN2, UTRAN or GSM) nor any cells for the 1<sup>st</sup> priority PLMN/RAT in EF<sub>PLMNwAcT</sub> (PLMN3/UTRAN) then UE shall select Cell 4 (2<sup>nd</sup> priority PLMN/RAT in EF<sub>PLMNwAcT</sub>).
- Cell 4 and Cell 3 are switched off. See note.

- g) The SS waits for random access requests from the UE. As no cell exists for neither registered PLMN (PLMN4 registered at step e), home PLMN (PLMN2, UTRAN or GSM) nor user controlled PLMN/RAT (PLMN3/UTRAN or PLMN4/GSM) then UE shall select Cell 5 (1<sup>st</sup> priority RAT for EF<sub>OPLMNwAcT</sub>).

NOTE: When the serving cell (Cell 1 in step d and Cell 4 in step f) is switched off then the UE will trigger the recovery from lack of coverage scenario (TS 23.122 clause 4.4.3.1). The UE will search for a cell within the registered PLMN or equivalent PLMN (if it is available) using all access technologies that the UE is capable of. Thus need Cell 2 in step d and Cell 3 in step f to be switched off.

#### 6.2.1.7.5 Test Requirements

- 1) In step c), the response from the UE shall be on Cell 1 (1<sup>st</sup> priority RAT for EF<sub>PLMNwAcT</sub>). The displayed PLMN shall be PLMN3 (UTRAN).
- 2) In step e), the response from the UE shall be on Cell 4 (2<sup>nd</sup> priority RAT for EF<sub>PLMNwAcT</sub>). The displayed PLMN shall be PLMN4 (GSM).
- 3) In step g), the response from the UE shall be on Cell 5 (1<sup>st</sup> priority RAT for EF<sub>OPLMNwAcT</sub>). The displayed PLMN shall be PLMN5 (UTRAN).

#### 6.2.1.8 Selection of RAT for OPLMN; Automatic mode

##### 6.2.1.8.1 Definition

Test to verify that the UE selects the OPLMN RAT according to the OPLMN RAT priority list on the USIM. If no PLMN/RAT on the OPLMN list is available then the UE shall search for other PLMN/access technology combinations with received high quality signal in random order.

##### 6.2.1.8.2 Conformance requirement

1. Automatic Network Selection Mode Procedure:

The MS selects and attempts registration on other PLMNs, if available and allowable in the following order:

- 1.1 HPLMN (if not previously selected);
- 1.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);
- 1.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);
- 1.4 Other PLMN/access technology combinations with received high quality signal in random order;
- 1.5 Other PLMN/access technology combinations in order of decreasing signal quality.

If successful registration is achieved, the MS indicates the selected PLMN.

If registration cannot be achieved because no PLMNs are available and allowable, the MS indicates "no service" to the user, waits until a new PLMN is available and allowable and then repeats the procedure.

If there were one or more PLMNs which were available and allowable, but an LR failure made registration on those PLMNs unsuccessful or an entry in the "forbidden LAs for regional provision of service" list prevented a registration attempt, the MS selects the first such PLMN again and enters a limited service state.

#### References

1. TS 23.122, clause 4.4.3.1.1.

NOTE: TS 31.102 defines the USIM fields.

## 6.2.1.8.3 Test purpose

1. To verify that:

1.1 the UE selects the OPLMN RAT according to the OPLMN RAT priority list on the USIM.

1.2 If no PLMN/RAT on the OPLMN RAT priority list is available, the UE searches for "other PLMN/access technology combinations with received high quality signal in random order".

## 6.2.1.8.4 Method of test

## Initial conditions

The UE is in automatic PLMN selection mode.

Cell levels are from tables 6.3 and 6.4.

In system information broadcast in each cell, the neighbouring cell list does not contain any other cell belonging to the same PLMN.

Cell	CPICH_Ec / RF signal level [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP / RF signal level [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-70	-59	1	PLMN 5	UTRAN
Cell 2	-48	-48	1	PLMN 5	GSM
Cell 3	-75	-64	2	PLMN 6	UTRAN
Cell 4	-50	-50	2	PLMN 6	GSM
Cell 5	-80	-69	3	PLMN 7	UTRAN

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN	Access Technology Identifier
EF <sub>LOCI</sub>		PLMN 1	
EF <sub>HPLMNwAcT</sub>	1 <sup>st</sup>	PLMN 2	UTRAN
	2 <sup>nd</sup>	PLMN 2	GSM
EF <sub>PLMNwAcT</sub>	1 <sup>st</sup>	PLMN 3	UTRAN
	2 <sup>nd</sup>	PLMN 4	GSM
EF <sub>OPLMNwAcT</sub>	1 <sup>st</sup>	PLMN 5	UTRAN
	2 <sup>nd</sup>	PLMN 6	GSM

[The HPLMN \(MCC+MNC\) of the IMSI for the USIM is set to PLMN2.](#)

## Test procedure

Method C is applied.

- a) The SS activates cells 1-5 and monitors the cells for random access requests from the UE.
- b) The UE is switched on.
- c) The SS waits for random access requests from the UE. As no cell exists for neither registered PLMN (PLMN1), home PLMN/RAT (PLMN2, UTRAN or GSM) nor user controlled PLMN/RAT (PLMN3/UTRAN or PLMN4/GSM) then the UE shall select Cell 1 (1<sup>st</sup> priority RAT for EF<sub>OPLMNwAcT</sub>).
- d) Cell 1 and Cell 2 are switched off. See note.
- e) The SS waits for random access requests from the UE. As no cell exists for neither registered PLMN (PLMN5 registered in step c), home PLMN/RAT (PLMN2, UTRAN or GSM), user controlled PLMN/RAT (PLMN3/UTRAN or PLMN4/GSM) nor any cells for the 1<sup>st</sup> priority PLMN/RAT in EF<sub>OPLMNwAcT</sub> (PLMN5/UTRAN) then UE shall select Cell 4 (2<sup>nd</sup> priority PLMN/RAT in EF<sub>OPLMNwAcT</sub>).

- f) Cell 4 and Cell 3 are switched off. See note.
- g) The SS waits for random access requests from the UE. As no cell exists for neither registered PLMN (PLMN6 registered in step c), home PLMN/RAT (PLMN2, UTRAN or GSM), user controlled PLMN/RAT (PLMN3/UTRAN or PLMN4/GSM) nor operator controlled PLMN/RAT (PLMN5/UTRAN or PLMN6/GSM) then UE shall select another PLMN/access technology combinations with received high quality signal in random order (Cell 5).

NOTE: When the serving cell (Cell 1 in step d and Cell 4 in step f) is switched off then the UE will trigger the recovery from lack of coverage scenario (TS 23.122 clause 4.4.3.1). The UE will search for a cell within the registered PLMN or equivalent PLMN (if it is available) using all access technologies that the UE is capable of. Thus need Cell 2 in step d and Cell 3 in step f to be switched off.

#### 6.2.1.8.5 Test Requirements

- 1) In step c), the response from the UE shall be on Cell 1 (1<sup>st</sup> priority RAT for  $EF_{OPLMN_{wACT}}$ ). The displayed PLMN shall be PLMN5 (UTRAN).
- 2) In step e), the response from the UE shall be on Cell 4 (2<sup>nd</sup> priority RAT for  $EF_{OPLMN_{wACT}}$ ). The displayed PLMN shall be PLMN6 (GSM).
- 3) In step g), the response from the UE shall be on either Cell 5 (other PLMN/access technology combination) with associated PLMN7 (UTRAN) shown.

3GPP TSG-T Meeting #21  
 Budapest, Hungary, 3rd – 7<sup>th</sup> November 2003

Tdoc # T1-031635

CR-Form-v7	
<b>CHANGE REQUEST</b>	
# <b>34.123-1 CR 608</b> # rev <b>2</b> #	Current version: <b>5.5.0</b> #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	# 6.2.2 Cell reselection and reselection		
<b>Source:</b>	# Nokia		
<b>Work item code:</b>	# TEI	<b>Date:</b>	# 04/11/03
<b>Category:</b>	# <b>F</b>	<b>Release:</b>	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)		2 (GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)		R96 (Release 1996)
	<b>B</b> (addition of feature),		R97 (Release 1997)
	<b>C</b> (functional modification of feature)		R98 (Release 1998)
	<b>D</b> (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

<b>Reason for change:</b>	# This CR is sent to guarantee stability of 6.2.2 test cases and to keep 34.123-1 and 34.123-3 in line. This change is already implemented in 34.123-3. e.g in the TC 6.2.2.1 within ts_IdleUpdated. The following is stated "The test flow do not specify this Step as requirement, but this has been included so as to assure that the USIM is in the idle updated state in the default location area with TMSI/P-TMSI assigned."
<b>Summary of change:</b>	# This CR guarantees that the test cases are stable and in line with 34.123-3 specification.
<b>Consequences if not approved:</b>	# TTCN ATS is not in align with the test specification 34.123-1

<b>Clauses affected:</b>	# Test cases 6.2.2.1, 6.2.2.2 and 6.2.2.3						
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	#
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<input checked="" type="checkbox"/>	Test specifications	#				
	<input checked="" type="checkbox"/>	O&M Specifications	#				
<b>Other comments:</b>	#						

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 6.2.2 Cell selection and reselection

### 6.2.2.1 Cell reselection if cell becomes barred or $S < 0$ ; UTRAN to GSM

#### 6.2.2.1.1 Definition

Test to verify that if both a GSM and UTRAN network is available, the UE performs cell reselection from UTRAN to GSM if the UTRAN cell becomes barred or  $S$  falls below zero.

#### 6.2.2.1.2 Conformance requirement

1. When camped on a cell, the UE shall regularly search for a better cell according to the cell reselection criteria. If a better cell is found, that cell is selected. The change of cell may imply a change of RAT.
2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.
  - 2.1 The cell is part of the selected PLMN or, of a PLMN considered as equivalent by the UE according to the information provided by the NAS.
  - 2.2 The cell is not barred.
  - 2.3 The cell is not part of the list of "forbidden LAs for roaming".
  - 2.4 The cell selection criteria are fulfilled.
3. When camped normally, the UE shall execute the cell reselection evaluation process on the following occasions/triggers:
  - 3.1 UE internal triggers, so as to meet performance as specified in TS 25.133 for FDD and TS 25.123 for TDD.
  - 3.2 When information on the BCCH used for the cell reselection evaluation procedure has been modified.
4. Cell Reselection Criteria:
  - 4.1 The UE shall perform ranking of all cells that fulfil the  $S$  criterion.
  - 4.2 The cells shall be ranked according to the  $R$  criteria, deriving  $Q_{meas,n}$  and  $Q_{meas,s}$  and calculating the  $R$  values using CPICH RSCP, P-CCPCH RSCP and the averaged received signal level as specified in TS 25.133 and TS 25.123 for FDD, TDD and GSM cells, respectively.
 

The offset  $Q_{offset1_{s,n}}$  is used for  $Q_{offset_{s,n}}$  to calculate  $R_n$ , the hysteresis  $Q_{hyst1_s}$  is used for  $Q_{hyst_s}$  to calculate  $R_s$ .

If the usage of HCS is indicated in system information,  $TEMP\_OFFSET1_n$  is used for  $TEMP\_OFFSET_n$  to calculate  $TO_n$ . If it is indicated in system information that HCS is not used,  $TEMP\_OFFSET_n$  is not applied when calculating  $R_n$ . The best ranked cell is the cell with the highest  $R$  value.

If a TDD or GSM cell is ranked as the best cell, then the UE shall perform cell re-selection to that TDD or GSM cell.
  - 4.3 In all cases, the UE shall reselect the new cell, only if the the following conditions are met:
    - the new cell is better ranked than the serving cell during a time interval  $T_{reselection}$ .
    - more than 1 second has elapsed since the UE camped on the current serving cell.

#### References

1. TS 25.304, clause 5.2.1.
2. TS 25.304, clause 4.3.
3. TS 25.304, clause 5.2.5.1.

4. TS 25.304, clause 5.2.6.1.4.

### 6.2.2.1.3 Test purpose

1. To verify that the UE performs cell reselection from UTRAN to GSM on the following occasions:

1.1 Serving cell becomes barred.

1.2  $S < 0$  for serving cell.

### 6.2.2.1.4 Method of test

Initial conditions

[UE is idle updated on cell 1.](#)

All cells belong to the same PLMN.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 9 (GSM) and Cell 10 (GSM).

The 3G Neighbour Cell Description of Cell 9 (GSM) and Cell 10 (GSM) refers to Cell 1 (UTRAN)

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH_Ec (FDD)	dBm / 3.84 MHz	-60
P-CCPCH_RSCP (TDD)	dBm	-60
Qrxlevmin	dBm	-101
Srxlev*	dBm	41
CellBarred		Not barred

Parameter	Unit	Cell 9 (GSM)	Cell 10 (GSM)
Test Channel		1	2
RF Signal Level	dBm	-80	-85
RXLEV_ACCESS_MIN	dBm	-100	-100
C1*	dBm	20	15
FDD_Qmin	dB	-20	-20
FDD_Qoffset	dBm	0	0

Step d-f:

Parameter	Unit	Cell 1 (UTRAN)
CellBarred		Not barred -> Barred
Tbarred	S	80

Step g:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-101 -> -41
Srxlev*	dB	40 -> -19

Test procedure

Method B is applied.



- a) The SS activates cells ~~1~~, 9, and 10 The SS monitors cells ~~1~~, 9 and 10 for random access requests from the UE.
- b) ~~The UE is switched on.~~ Void
- c) ~~The SS waits for random access request from the UE.~~ Void
- d) The SS sets Cell 1 to be barred.
- e) The SS waits for random access request from the UE.
- f) The UE is switched off.
- g) Step a-e) is repeated except that in step d), Qrxlevmin is increased, so S will become negative instead of being barred.

#### 6.2.2.1.5 Test Requirements

- 1) In step ae), after the UE has responded on Cell 1, it shall not respond on any other cell within 1 min.
- 2) In step e), the UE shall respond on Cell 9.
- 3) In step g), the UE shall respond on Cell 9 after Qrxlevmin is increased.

#### 6.2.2.2 Cell reselection if cell becomes barred or $C1 < 0$ ; GSM to UTRAN

##### 6.2.2.2.1 Definition

Test to verify that if both a GSM and UTRAN network is available, the UE performs cell reselection from GSM to UTRAN if the GSM cell becomes barred or the path loss criterion C1 falls below zero for a period of 5 s.

##### 6.2.2.2.2 Conformance requirement

- 1. At least every 5 s the MS shall calculate the value of C1 and C2 for the serving cell and re-calculate C1 and C2 values for non serving cells (if necessary). The MS shall then check whether:
  - 1.1 The path loss criterion (C1) for current serving cell falls below zero for a period of 5 s. This indicates that the path loss to the cell has become too high.
- 2. While camped on a cell of the registered PLMN ("camped normally"), the MS may need to select a different cell ("normal cell reselection" state). The following events trigger a cell reselection:
  - 2.1 The path loss criterion parameter C1 (see TS 03.22, clause 3.6) indicates that the path loss to the cell has become too high;
  - 2.2 The cell camped on (current serving cell) has become barred.

#### References

- 1. TS 05.08, clause 6.6.2.
- 2. TS 03.22, clause 4.5.

##### 6.2.2.2.3 Test purpose

- 1. To verify that the UE performs cell reselection from GSM to UTRAN on the following occasions:
  - 1.1 Serving cell becomes barred.
  - 1.2 The path loss criterion C1 for serving cell falls below zero for a period of 5 s.

## 6.2.2.2.4 Method of test

## Initial conditions

[UE is idle updated on Cell 9.](#)

~~The USIM does not contain any preferred RAT.~~

The 3G Neighbour Cell Description of Cell 9 (GSM) refers Cell 1 (UTRAN) and Cell 2 (UTRAN).

The Inter-RAT Cell Info List of Cell 1 (UTRAN) and Cell 2 (UTRAN) refers to Cell 9 (GSM).

Step a-c:

Parameter	Unit	Cell 9 (GSM)
Test Channel		1
RF Signal Level	dBm	-50
RXLEV_ACCESS_MIN	dBm	-70
MS_TXPWR_MAX_CCH	dBm	Max. output power of UE
FDD_Qmin	dB	-20
FDD_Qoffset	dBm	0
CELL_BAR_ACCESS		Not barred
C1*	dBm	20

Parameter	Unit	Cell 2 (UTRAN)	Cell 3 (UTRAN)
P-CCPCH_RSCP (TDD)	dBm	-60	-70
CPICH_Ec (FDD)	dBm/3.84 MHz	-60	-70
Qrxlevmin	dBm	-101	-101
Srxlev*	dBm	41	31

Step d-e:

Parameter	Unit	Cell 9 (GSM)
CELL_BAR_ACCESS		Not barred -> Barred

Step f-g:

Parameter	Unit	Cell 9 (GSM)
RF Signal Level	dBm	-50 -> -80 (4sec) -> -50
C1*	dBm	20 -> -10 (4sec) -> 20

Step h:

Parameter	Unit	Cell 9 (GSM)
RF Signal Level	dBm	-50 -> -80
C1*	dBm	20 -> -10

## Test procedure

Method B is applied.

- a) The SS activates cells 1, ~~2~~ and ~~29~~. The SS monitors cells 1, ~~2~~ and ~~29~~ for random access requests from the UE.

- b) ~~The UE is switched on~~ Void.
- c) ~~The SS waits for random access request from the UE.~~ Void
- d) The SS sets Cell 9 to be barred.
- e) The SS waits for random access request from the UE.
- f) The UE is switched off.
- g) Step a-e) is repeated except that in step d), the SS reduces signal level on Cell 9 to -80 dBm for 4 s and then raises the level back to -50 dBm (C1 becomes -10 dBm during this period).
- h) The SS reduces signal level on Cell 9 to -80 dBm.

#### 6.2.2.2.5 Test Requirements

- 1) In step ae), after the UE has responded on Cell 9, it shall not respond on any other cell within 1 min.
- 2) In step e), the UE shall respond on Cell 1.
- 3) In step g), there shall be no access on Cell 1 within 30 s, after having reduced the signal level on Cell 1.
- 4) In step h), the UE shall respond on Cell 1.

### 6.2.2.3 Cell reselection timings; GSM to UTRAN

#### 6.2.2.3.1 Definition

Test to verify that the UE meets the cell reselection timing requirements when both a GSM and UTRAN network is available.

#### 6.2.2.3.2 Conformance requirement

1. If the 3G Cell Reselection list (see TS 04.18) includes UTRAN frequencies, the MS shall, at least every 5 s update the value RLA\_C for the serving cell and each of the at least 6 strongest non-serving GSM cells.
  - 1.1 The MS shall then reselect a suitable UTRAN cell if its measured RSCP value exceeds the value of RLA\_C for the serving cell and all of the suitable non-serving GSM cells by the value XXX\_Qoffset for a period of 5 s and, for FDD, the UTRAN cells measured Ec/No value is equal or greater than the value FDD\_Qmin.
    - Ec/No and RSCP are the measured quantities.
    - FDD\_Qmin and XXX\_Qoffset are broadcast on BCCH of the serving cell. XXX indicates other radio access technology/mode.
  - 1.2 In case of a cell reselection occurring within the previous 15 s, XXX\_Qoffset is increased by 5 dB.
  - 1.3 Cell reselection to UTRAN shall not occur within 5 s after the MS has reselected a GSM cell from an UTRAN cell if a suitable GSM cell can be found.
  - 1.4 If more than one UTRAN cell fulfils the above criteria, the UE shall select the cell with the greatest RSCP value.
2. The MS shall be able to identify and select a new best UTRAN cell on a frequency, which is part of the 3G Cell Reselection list, within 30 s after it has been activated under the condition that there is only one UTRAN frequency in the list and under good radio conditions.

The allowed time is increased by 30 s for each additional UTRAN frequency in the 3G Cell Reselection list. However, multiple UTRAN cells on the same frequency in the neighbour cell list does not increase the allowed time.

NOTE: Definitions of measurements are in TS 25.215 and TS 25.101 for FDD mode, in TS 25.225 and TS 25.102 for TDD mode, clause 3.2 and TS 05.08, clause 6.1.

## References

1. TS 05.08, clause 6.6.5.
2. TS 05.08, clause 6.6.4.

## 6.2.2.3.3 Test purpose

1. To verify that:
  - 1.1 The UE meets conformance requirement 1.1 and additionally, that no cell reselection is performed if the period is less than 5 s
  - 1.2 The UE meets conformance requirement 1.2.
  - 1.3 The UE meets conformance requirement 1.3.

## 6.2.2.3.4 Method of test

## Initial conditions

[UE is idle updated on Cell 9.](#)

The 3G Neighbour Cell Description of Cell 9 (GSM) and Cell 10 (GSM) refers Cell 1 (UTRAN).

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 9 (GSM) and Cell 10 (GSM).

Step a-c:

Parameter	Unit	Cell 9 (GSM)	Cell 10 (GSM)
Test Channel		1	2
RF Signal Level	dBm	-70	-85
RXLEV_ACCESS_MIN	dBm	-100	-100
MS_TXPWR_MAX_CCH	dBm	Max. output power of UE	Max. output power of UE
FDD_Qmin	dBm	-20	-20
FDD_Qoffset	dBm	5	5

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH_Ec (FDD)	dBm / 3.84 MHz	-74
P-CCPCH_RSCP (TDD)	dBm	-74
Qrxlevmin	dBm	-101
Srxlev*	dBm	27

Step d-g:

Parameter	Unit	Cell 9 (GSM)	Cell 10 (GSM)
RF Signal Level	dBm	-70 -> -82 (4 s) -> -70	OFF

Step h-j:

Parameter	Unit	Cell 9 (GSM)	Cell 10 (GSM)
RF Signal Level	dBm	-82 -> -70	OFF

Step k-m:

Parameter	Unit	Cell 9 (GSM)	Cell 10 (GSM)
RF Signal Level	dBm	-82 -> -70 -> -82	OFF

### Test procedure

NOTE: Step a-c): Test purpose 1.3. Step d-g): test purpose 1.1. Step h-k): test purpose 1.2.

Method B is applied.

- a) The SS activates the channels. The UE is not paged on any of the cells.
- b) ~~The UE is switched on.~~Void
- c) After 50 s, the SS starts paging continuously on cells 9 and 1 for 20 s. The SS monitors cells 9 and 1 for random access requests from the UE.
- d) Cell 10 is switched off. The SS stops paging on the cells and waits for 20 s. (The UE should revert to Cell 9 due to cell reselection).
- e) The SS starts paging continuously on Cell 1.
- f) The SS decreases the transmit level of Cell 9 to -82 dBm for a period of 4 s (RSCP will then exceed RLA\_C value of Cell 9 by more than XXX\_Qoffset) and then changes the level back to -70 dBm.
- g) The SS waits to see if there is any random access requests from the UE on Cell 1.
- h) The SS stops paging on all cells and sets the transmit level of Cell 9 to -82 dBm.
- i) The SS waits 20 s and then starts paging continuously on Cell 9. (The UE should revert to Cell 1 due to cell reselection).
- j) The SS increases the transmit level of Cell 9 to -70 dBm and waits for the UE to access on Cell 9. The SS records the time t from the increase in the level of Cell 9 to the first response from the UE.
- k) The SS stops paging on all cells and sets the transmit level of Cell 9 back to -82 dBm.
- l) The SS waits 20 s (The UE should revert to Cell 1 due to cell reselection).
- m) The SS increases the transmit level of Cell 9 to -70 dBm. After t+2 s (i.e. 2 s after reselection to Cell 9), the SS starts paging continuously on Cell 1, changes the level of Cell 9 back to -82 dBm and waits to see if there is any random access request on Cell 1. (Within 15 sec after cell reselection to GSM, the level of Cell 9 is -82 + 10 dBm=-72 dBm. After the 15 s period, the level of Cell 9 is -82 + 5 dBm=-77 dBm. The level of Cell 1 is -74 dBm, thus leading to reselection to Cell 1 after 15 s).

#### 6.2.2.3.5 Test Requirements

- 1) In step c), after the UE has reselected Cell 9 from Cell 1 as indicated by random access requests, any random access requests on Cell 1 shall not occur within 4,5 s of the last random access request on Cell 9.
- 2) In step g), there shall be no access on Cell 1 within 34 s of decreasing the level of Cell 9.
- 3) In step j), the UE shall respond on Cell 9.
- 4) In step m), there shall be no response on Cell 1 within 11 s after the level of Cell 9 is changed back to -82 dBm.

NOTE: The 11 s is derived from (t+15) s minimum cell reselection timer minus (t+2) s from the start of step m) up to the decrease of the level of Cell 9. A further 2 s are subtracted to cover for any uncertainty introduced by the random access process occurring after step g).

CR-Form-v7

## CHANGE REQUEST

⌘ **TS 34.123-1 CR 643** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correction to Package 1 test case 7.2.3.13.		
<b>Source:</b>	⌘ Ericsson		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 05/11/2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ Test case 7.2.3.13 is supposed to work both with UEs which discards or buffers AM RLC SDUs when transmission buffer is full. This is currently not clear in the test case. It is only mentioned in a note.
<b>Summary of change:</b>	⌘ Test case changed to clarify that SS has to consider the two different UE behaviours. Changes in this version compared to T1-031522 marked in yellow.
<b>Consequences if not approved:</b>	⌘ Test cases fails a conformant UE.

<b>Clauses affected:</b>	⌘ 7.2.3.13										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;"> </td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X	X				X	⌘	TS 34.123-3 (The TTCN code has to be updated to reflect the changes). TS 34.123-2
Y	N										
X	X										
	X										
<b>Other comments:</b>	⌘ Affects R99, REL-4 and REL-5 UEs.										

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

### 7.2.3.13 Control of Transmit Window

#### 7.2.3.13.1 Definition

This test is to check that the UE is able to correctly control its RLC transmission window. Correct operation of RLC windowing is critical for acknowledged mode operation.

#### 7.2.3.13.2 Conformance requirement

VT(MS) - Maximum Send state variable.

This state variable contains the "Sequence Number" of the first AMD PDU that can be rejected by the peer Receiver,  $VT(MS) = VT(A) + VT(WS)$ . This value represents the upper edge of the transmission window. The transmitter shall not transmit AMD PDUs with "Sequence Number"  $\geq VT(MS)$  unless  $VT(S) \geq VT(MS)$ . In that case, the AMD PDU with "Sequence Number" =  $VT(S) - 1$  can also be transmitted. VT(MS) shall be updated when VT(A) or VT(WS) is updated.

The initial value of this variable is Configured\_Tx\_Window\_size.

... The receiver is always allowed to change the Tx window size of the peer entity during a connection, but the minimum and the maximum allowed value is given by RRC configuration. The Rx window of the receiver is not changed.

#### Reference(s)

TS 25.322, clauses 9.2.2.11.3 and 9.4.

#### 7.2.3.13.3 Test purpose

To verify that the UE does not transmit PDUs with sequence numbers outside of the transmit window, except the PDU with  $SN=VT(S)-1$ , even when the transmit window size is changed by the receiver.

#### 7.2.3.13.4 Method of test

##### Initial conditions

The generic procedure for Radio Bearer establishment (clause 7.1.3 of TS 34.108) is executed, with all the parameters as specified in the procedure, with the exception that the default Radio Access Bearer is replaced with the RAB defined for AM 7-bit "Length Indicator" tests in clause 7.2.3.1.

The following RLC parameter values are used in place of the values in clause 7.2.3.1:

Uplink RLC Transmission window size	First run 8	Second run 128
--	----------------	-------------------

These settings apply to both the uplink and downlink DTCH.

The Radio Bearer is placed in UE test loop mode 1 with the UL SDU size set to AM\_7\_PayloadSize - 1 bytes.

#### Related ICS/IXIT statements

Support of RLC SDU Buffering Yes/No

Support of RLC SDU Discard Yes/No

Note: UE supports either RLC SDU Buffering OR RLC SDU Discard.



## Test procedure

Let  $W$  be the size of the transmit window.

The length of all transmitted SDUs is set to  $AM\_7\_PayloadSize - 1$  bytes.

- a) The SS transmits  $W+1$  RLC SDUs to the UE.
- b) The SS checks the RLC SDUs received on the uplink, but does not reply to poll requests from the UE, or transmit STATUS PDUs for any other reason.
- c) After confirming that the UE has stopped transmitting new RLC SDUs for at least  $(2*W*TTI)$  ms, the SS transmits a STATUS PDU acknowledging all the RLC PDUs received so far. The SS transmits  $W+1$  additional RLC SDUs to the UE.
- d) The SS again checks the RLC SDUs received on the uplink, but does not reply to poll requests from the UE, or transmit further STATUS PDUs for any other reason.
- e) After confirming that the UE has again stopped transmitting new RLC SDUs for at least  $(2*W*TTI)$  ms, the SS transmits a STATUS PDU acknowledging all the RLC PDUs received so far, and containing a WINDOW command to reduce the UE transmit window size ( $W$ ) to half its initial size. The SS transmits  $W/2+1$  additional RLC SDUs to the UE (where  $W$  is the original window size).
- f) The SS checks the RLC SDUs received on the uplink, but does not reply to poll requests from the UE, or transmit STATUS PDUs for any other reason.
- g) After confirming that the UE has stopped transmitting new RLC SDUs for at least  $(2*W*TTI)$  ms, the SS transmits a STATUS PDU acknowledging all the RLC PDUs received so far. The SS transmits  $W/2+1$  additional RLC SDUs to the UE (where  $W$  is the original window size).
- h) The SS checks the RLC SDUs received on the uplink.
- i) The SS may optionally release the radio bearer.

NOTE: Window arithmetic is carried out modulo 4096.

The test procedure is run with the window transmit window size set to the default (8), and the repeated with the transmit window size set to 128.

## Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			RB ESTABLISHMENT	See generic procedures
2	←		DOWNLINK RLC PDU	SDU 1
3	←		DOWNLINK RLC PDU	SDU 2
4	←		DOWNLINK RLC PDU	SDU 3
5	←		DOWNLINK RLC PDU	SDU 4
6	←		...	SS continues to transmit RLC SDUs
7	←		DOWNLINK RLC PDU	SDU W+1
8	→		UPLINK RLC PDU	SDU 1
9	→		UPLINK RLC PDU	SDU 2
10	→		...	SS continues to receive RLC SDUs
11	→		UPLINK RLC PDU	SDU W + poll
12				No new transmissions from UE
13	←		STATUS PDU	
13a	←		DOWNLINK RLC PDUs	SDU W+2
13b			...	SS continues to transmit RLC SDUs
13c	←		DOWNLINK RLC PDUs	SDU 2W+2
14	→		UPLINK RLC PDU	<a href="#">SDU W+1 (SDU buffered), or W+2 (SDU W+1 discarded, see note 3)</a> <del>SDU W+1</del> <del>SDU W+2</del> Next SDU
15	→		UPLINK RLC PDU	
16	→		...	SS continues to receive RLC SDUs
17	→		UPLINK RLC PDU	SDU 2W+-poll ( <a href="#">SDU buffered</a> ), or <a href="#">SDU 2W+1+poll (SDU W+1 discarded, see note 3)</a>
18				No new transmissions from UE
19	←		STATUS PDU	WINDOW = W/2
19a	←		DOWNLINK RLC PDUs	SDU 2W+3
19b			...	SS continues to transmit RLC SDUs
19c	←		DOWNLINK RLC PDUs	SDU 2W + W/2 + 3
20	→		UPLINK RLC PDU	SDU 2W+1 ( <a href="#">SDU buffered</a> ), or <a href="#">2W+3 (SDU 2W+2 discarded, see note 3)</a> <del>SDU 2W+2</del> Next SDU
21	→		UPLINK RLC PDU	
22	←		...	SS continues to receive RLC SDUs
23	→		UPLINK RLC PDU	SDU 2W+-W/2+-poll ( <a href="#">SDU buffered</a> ), or <a href="#">SDU 2W+W/2+2+poll (SDU 2W+2 discarded, see note 3)</a>
24				No new transmissions from UE
25	←		STATUS PDU	
25a	←		DOWNLINK RLC PDUs	SDU 2W + W/2 + 4
25b			...	SS continues to transmit RLC SDUs
25c	←		DOWNLINK RLC PDUs	SDU 3W + 4
26	→		UPLINK RLC PDU	SDU 2W+W/2+1 ( <a href="#">SDU buffered</a> ), or <a href="#">2W+W/2+4 (SDU 2W+W/2+3 discarded, see note 3)</a> <del>SDU 2W+W/2+2</del> Next SDU
27	→		UPLINK RLC PDU	
28	←		...	SS continues to receive RLC SDUs

29	→	UPLINK RLC PDU	SDU $3W + \text{poll}$ (SDU buffered), or SDU $3W+3+\text{poll}$ (SDU $2W+W/2+3$ discarded, see note 3)
30		RB RELEASE	Optional step

NOTE 1: The Expected Sequence shown is informative. The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity. Information such as SDU, PDU or Sequence numbers given in the comments column shall be considered informative only, for test case development purposes.

NOTE 2: The polls in step 11, 17, 23 and 29 are transmitted as the last PDU in buffer trigger is set to TRUE and the transmitted PDU is the last PDU in the transmitter window, see TS 25.322 clause 9.7.1.

NOTE 3: TS 25.322 does not specify the UE behaviour when transmission buffer is full. Thus, depending on UE implementation, the uplink AM entity may or may not discard AM RLC PDUs received from upper layer (e.g. from UE test loop function) when transmission buffer is full. The SS need to take this into consideration when comparing SS sent SDUs in downlink with the UE returned SDUs in uplink.

### 7.2.3.13.5 Test requirements

From steps 8 to 11, the SDU contents reassembled from the uplink shall match those of the first  $W$  transmitted SDUs.

At step 12 there shall be no further transmission on the uplink DTCH whilst the SS is waiting, except for any repeats of SDUs from 1 to  $W$ . ~~PDU with sequence numbers from 0 to  $W-1$ .~~

After step 13, the UE shall resume transmission of the next  $W$  SDUs. The contents of these SDUs shall match those of SDUs  $W+1$  to  $2*W$  (SDU buffered, see note 3), or  $W+2$  to  $2*W+1$  (SDU  $W+1$  discarded, see note 3), sent on the downlink.

At step 18 there shall be no further transmission on the uplink DTCH whilst the SS is waiting, except for any repeats of SDUs from  $W+1$  to  $2*W$  or  $W+2$  to  $2*W+1$ . ~~PDU with sequence numbers from  $W$  to  $2W-1$ .~~

After step 19, the UE shall resume transmission of the next  $W/2$  SDUs. The contents of these SDUs shall match those of SDUs  $2*W+1$  to  $2*W+W/2$  (SDU buffered, see note 3), or  $2*W+3$  to  $2*W+W/2+2$  (SDU  $2W+2$  discarded, see note 3), sent on the downlink.

At step 24 there shall be no further transmission on the uplink DTCH whilst the SS is waiting, except for any repeats of SDUs from  $2*W+1$  to  $2*W+W/2$  or  $2*W+3$  to  $2*W+W/2+2$ . ~~PDU with sequence number from  $2W$  to  $W/2-1$ .~~

After step 25, the UE shall resume transmission of the next  $W/2$  SDUs. The contents of these SDUs shall match those of SDUs  $2*W+W/2+1$  to  $3*W$  (SDU buffered, see note 3), or  $2*W+W/2+4$  to  $3*W+3$  (SDU  $2W+W/2+3$  discarded, see note 3), sent on the downlink.

~~NOTE:—TS 25.322 does not specify the UE behaviour when transmission buffer is full. Thus, depending on UE implementation, the uplink AM entity may or may not discard AM RLC PDUs received from upper layer (e.g. from UE test loop function) when transmission buffer is full. The SS need to take this into consideration when comparing SS sent SDUs in downlink with the UE returned SDUs in uplink.~~

## CHANGE REQUEST

⌘ **34.123-1 CR 593** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

**Title:** ⌘ CR to TS 34.123-1 [REL-5] Package 2 Inter-system handover test cases: 8.3.7.1, 8.3.7.2, 8.3.7.3 and 8.3.7.4 (Revision of T1-031364)

**Source:** ⌘ Anite Telecoms

**Work item code:** ⌘ TEI **Date:** ⌘ 20/10/03

**Category:** ⌘ F **Release:** ⌘ REL-5

**Reason for change:** ⌘ 8.3.7.1, 8.3.7.2, 8.3.7.3, 8.3.7.4

Excerpt from 25.331 in the test requirements section is not up to date.  
Steps in the test procedure repeat those in initial conditions.  
GSM 1900 band is missing from the ICS/IXIT statements.  
Some minor editorial corrections are required.

### 8.3.7.1, 8.3.7.2, 8.3.7.3

For multiple executions the UE and SS need to be returned to their initial state.  
The majority of the HANDOVER COMMAND content is repeated for multiple executions even though the content is identical.  
The test requirement and test purpose are not compatible.

### 8.3.7.2

For multi-slot configurations the reference to GSM 51.010 is not correct

**Summary of change:** ⌘ 8.3.7.1, 8.3.7.2, 8.3.7.3, 8.3.7.4

In the conformance requirements section the excerpt from 25.331 is updated to the latest spec version.

The initial conditions and test procedure section are updated so that there is no overlap.

GSM-PCS is added to the list of Related ICS/IXIT statements.

### 8.3.7.1, 8.3.7.2, 8.3.7.3

A procedure is added to the end of the expected sequence section so that the UE and SS are returned to their initial state for a further execution.

The majority of the HANDOVER COMMAND content is only provided once for all executions.

The test requirement is updated to be testable and reflect the test purpose.

**8.3.7.2**

For multi-slot configurations the reference to 51.010 is updated from 26.13.3.1 to 26.13.1.3.

**Consequences if not approved:** ☞ The UE will not behave in the expected manner.

**Clauses affected:** ☞ 8.3.7.1, 8.3.7.2, 8.3.7.3, 8.3.7.4

	Y	N		
<b>Other specs Affected:</b>	☞	X	Other core specifications	☞
		X	Test specifications	
		X	O&M Specifications	

**Other comments:** ☞ Affects R99, Rel-4 and Rel-5 test cases.

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☞ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request

### 8.3.7.1 Inter system handover from UTRAN/To GSM/Speech/Success

#### 8.3.7.1.1 Definition

#### 8.3.7.1.2 Conformance requirement

The UE shall be able to receive a HANOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

- 1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later	HANOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

- 1> if the IE "System type" has the value "GSM":
  - 2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":
    - 3> set the BAND\_INDICATOR [45] to "ARFCN indicates 1800 band".
  - 2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":
    - 3> set the BAND\_INDICATOR [45] to "ARFCN indicates 1900 band".
- 1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.
- 1> if the IE "RAB information List" is included in the HANOVER FROM UTRAN COMMAND message:
  - 2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":
    - 3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

Upon successfully completing the handover, the UE shall:

- ~~1> if the USIM is present:~~
  - ~~2> store the current START value for every CN domain in the USIM [50];~~
  - ~~2> if the "START" stored in the USIM [50] for a CN domain is greater than or equal to the value "THRESHOLD" of the variable START\_THRESHOLD;~~
  - ~~3> delete the ciphering and integrity keys that are stored in the USIM for that CN domain;~~
  - ~~3> inform the deletion of these keys to upper layers.~~

~~1> if the SIM is present:~~

~~2> store the current START value for every CN domain in the UE;~~

~~2> if the "START" stored in the UE for a CN domain is greater than or equal to the value "THRESHOLD" of the variable START\_THRESHOLD;~~

~~3> delete the ciphering and integrity keys that are stored in the SIM for that CN domain;~~

~~3> inform the deletion of these keys to upper layers.~~

1> if there are any NAS messages with the IE "CN domain identity" set to "CS domain" for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 that have not yet been confirmed by RLC:

2> retransmit those NAS messages to the network on the newly established radio connection to the target radio access technology.

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

#### Reference(s)

TS 25.331 clause 8.3.7.3, 8.3.7.4.

#### 8.3.7.1.3 Test purpose

To test that the UE supporting both GSM and UTRAN hands overs from a UTRAN serving cell to the indicated channel of GSM target cell when the UE is in the speech call active state and receives an HANDOVER FROM UTRAN COMMAND.

#### 8.3.7.1.4 Method of test

##### Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE. ~~UE: CC State U10 in cell 1, one CS domain RAB is established and no PS domain RABs are established.~~

##### Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports GSM AMR,
- UE supports GSM EFR,
- UE supports GSM FR,
- UE supports GSM HR,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS.

##### Foreseen final state of the UE

The UE is in CC state U10 on cell 9.

##### Test Procedure

The SS ~~starts the UTRAN cell and~~ brings the UE into call active state (CC state U10) with AMR. The SS ~~starts GSM cell and~~ configures the appropriate traffic channel on the GSM cell, then sends HANDOVER FROM UTRAN

COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS through GSM cell.

Depending on the PIXIT parameters the above procedure is executed maximum four times, each time with a different target channel in the GSM cell.

For UEs ~~for which~~ where the PIXIT indicates support for the GSM/ DCS 1800 and/ or GSM/ PCS 1900 band, the whole test should be repeated to cover these frequencies in order to verify the correct handling of the IE "Frequency band".

Inter RAT handover is normally preceded by the configuration and activation of compressed mode (depending on UE capabilities/ PIXIT) and the configuration of inter- RAT measurements. The inter RAT handover is normally initiated by the SS upon receiving an event triggered measurement report. The verification of this functionality is covered by other subclauses.

#### Expected sequence

This sequence is performed for a maximum execution counter M = 1, 2, 3, 4, depending on the PIXIT parameters.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into UTRAN U10 state in cell 1
2		SS		The SS configures <del>cell 9 as a GSM cell with</del> a traffic channel <a href="#">on cell 9 (GSM cell)</a> : for GSM AMR (M = 1); or for GSM EFR (M = 2); or for GSM FR (M = 3); or for GSM HR (M = 4).
3		←	HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM AMR (M = 1); or the target channel for GSM EFR (M = 2); or the target channel for GSM FR (M = 3); or the target channel for GSM HR (M = 4).
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5		→	HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
6		→	HANDOVER ACCESS	
7		→	HANDOVER ACCESS	
8		→	HANDOVER ACCESS	
9		←	PHYSICAL INFORMATION	
10		→	SABM	
11		←	UA	
12		→	HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.
				<a href="#">The SS performs a 'postamble' and restores both UE and SS to their initial state so that the test can be repeated from step 1 for executions 2,3 and 4 (if required).</a>

#### Specific message contents

~~For execution 1:~~



HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type RRC transaction identifier Integrity check info - Message authentication code  - RRC Message sequence number Activation time RAB Info - RAB identity  - CN domain identity - NAS Synchronization Indicator - Re-establishment timer Inter-system message - CHOICE System type - Frequency Band  - CHOICE GSM message - Message	Arbitrarily selects one integer between 0 to 3  SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. Now  0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity. CS domain Not present Use T315  GSM Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" Single GSM message GSM HANDOVER COMMAND formatted and coded according to GSM specifications as Variable Length BIT STRING without Length Indicator. The first/ leftmost/ most significant bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

[For execution 1:](#)

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 3
---

For execution 2:

**HANDOVER FROM UTRAN COMMAND-GSM**

Information Element	Value/remark
Message Type	Arbitrarily selects one integer between 0 to 3
RRC transaction identifier	
Integrity check info	
— Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
— RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
RAB Info	
— RAB identity	0000 0001B
— CN domain identity	The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
— NAS Synchronization Indicator	CS domain
— Re-establishment timer	Not present
Inter-system message	Use T315
— CHOICE System type	GSM
— Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
— CHOICE GSM message	Single GSM message
— Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as Variable Length BIT STRING without Length Indicator. The first/ leftmost/ most significant bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

**HANDOVER COMMAND**

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 2

For execution 3:

**HANDOVER FROM UTRAN COMMAND-GSM**

Information Element	Value/remark
Message Type	Arbitrarily selects one integer between 0 to 3
RRC transaction identifier	
Integrity check info	
— Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
— Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	now
RAB Info	
— RAB identity	0000-0004B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
— CN domain identity	GS domain
— NAS Synchronization Indicator	Not present
— Re-establishment timer	Use T315
Inter-system message	
— CHOICE System type	GSM
— Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
— CHOICE system	Single GSM message
— Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as BIT STRING(1..512). The first/ leftmost/ most significant bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

**HANDOVER COMMAND**

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1

For execution 4:

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
— Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
— RRC Message sequence number	SS provides the value of this IE, from its internal counter. now
Activation time	
RAB Info	
— RAB identity	0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
— CN domain identity	CS domain
— NAS Synchronization Indicator	Not present
— Re-establishment timer	Use T315
Inter-system message	
— CHOICE System type	GSM
— Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
— CHOICE system	Single GSM message
— Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as Variable Length BIT STRING without Length Indicator. The first/ leftmost/ most significant bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 4 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1

8.3.7.1.5 Test requirement

At step 5 the SS receives a handover access burst on the traffic channel of the GSM cell indicating that the UE has switched to the GSM cell.

~~After step 12 the ongoing call shall be continued on the GSM cell~~ SS receives a HANDOVER COMPLETE message indicating a successful handover to the GSM cell.

## 8.3.7.2 Inter system handover from UTRAN/To GSM/Data/Same data rate/Success

### 8.3.7.2.1 Definition

### 8.3.7.2.2 Conformance requirement

The UE shall be able to receive a HANOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

- 1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later	HANOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

- 1> if the IE "System type" has the value "GSM":

- 2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":

- 3> set the BAND\_INDICATOR [45] to "ARFCN indicates 1800 band".

- 2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":

- 3> set the BAND\_INDICATOR [45] to "ARFCN indicates 1900 band".

- 1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.

- 1> if the IE "RAB information List" is included in the HANOVER FROM UTRAN COMMAND message:

- 2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":

- 3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

Upon successfully completing the handover, the UE shall:

- ~~1> if the USIM is present:~~

- ~~2> store the current START value for every CN domain in the USIM [50];~~

- ~~2> if the "START" stored in the USIM [50] for a CN domain is greater than or equal to the value "THRESHOLD" of the variable START\_THRESHOLD:~~

- ~~3> delete the ciphering and integrity keys that are stored in the USIM for that CN domain;~~

- ~~3> inform the deletion of these keys to upper layers.~~

- ~~1> if the SIM is present:~~

- ~~2> store the current START value for every CN domain in the UE;~~
- ~~2> if the "START" stored in the UE for a CN domain is greater than or equal to the value "THRESHOLD" of the variable START\_THRESHOLD;~~
- ~~3> delete the ciphering and integrity keys that are stored in the SIM for that CN domain;~~
- ~~3> inform the deletion of these keys to upper layers.~~

- 1> if there are any NAS messages with the IE "CN domain identity" set to "CS domain" for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 that have not yet been confirmed by RLC:
  - 2> retransmit those NAS messages to the network on the newly established radio connection to the target radio access technology.
- 1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

#### Reference(s)

TS 25.331 Clause 8.3.7.3, 8.3.7.4.

#### 8.3.7.2.3 Test purpose

To test that the UE hands over to the indicated channel of same data rate in the GSM target cell when it is in the data call active state in the UTRAN serving cell and receives an HANDOVER FROM UTRAN COMMAND.

#### 8.3.7.2.4 Method of test

#### Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 26.6.5.1 or clause 26.13.1.3 (for HSCSD) shall be referenced for the default parameters of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE. ~~UE : CC State U10 in cell 1, one CS domain RAB is established and no PS domain RABs are established.~~

#### Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN Streaming/unknown/uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports UTRAN Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports UTRAN Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM 14.4 kbps data (HSCSD or full rate traffic channel for 14.4 kbit/s user data (TCH/F14.4)),
- UE supports GSM 28.8 kbps data (HSCSD or enhanced circuit switched full rate traffic channel for 28.8 kbit/s user data (E-TCH/F28.8)),
- UE supports GSM 57.6 kbps data,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS.

#### Foreseen final state of the UE

The UE is in CC state U10 on cell 9.

## Test Procedure

The SS ~~starts the UTRAN cell and~~ brings the UE into data call active state (CC state U10) with a suitable configuration (e.g. Streaming/unknown/uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs for M = 1). The SS ~~starts GSM cell and~~ configures an appropriate traffic channel (e.g. 14.4 kbps data channel for M = 1) on the GSM cell, then sends a HANDOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell.

Depending on the PIXIT parameters the above procedure is executed maximum three times, each time with a different target channel in the GSM cell.

UEs for which the PIXIT indicates support for the GSM/ DCS 1800 and/ or GSM/ PCS 1900 band, the test should cover these frequencies in order to verify the correct handling of the IE "Frequency band".

Inter RAT handover is normally preceded by the configuration and activation of compressed mode (depending on UE capabilities/ PIXIT) and the configuration of inter- RAT measurements. The inter RAT handover is normally initiated by the SS upon receiving an event triggered measurement report. The verification of this functionality is covered by other subclauses.

## Expected sequence

This sequence is performed for a maximum execution counter M = 1, 2, 3, depending on the PIXIT parameters.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into UTRAN U10 state in cell 1, the configuration is: Streaming/unknown/uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 1); Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 2); Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 3).
2	SS			The SS configures <del>cell 9 as a GSM cell with</del> a traffic channel <u>on cell 9 (GSM cell)</u> : for GSM 14.4 kbps data (M = 1); or for GSM 28.8 kbps data (M = 2); or for GSM 57.6 kbps data (M = 3).
3	←		HANDOVER FROM UTRAN COMMAND GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM 14.4 kbps data (M = 1); or for GSM 28.8 kbps data (M = 2); or for GSM 57.6 kbps data (M = 3).
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANDOVER ACCESS	
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	←		PHYSICAL INFORMATION	
10	→		SABM	
11	←		UA	
12	→		HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.
				<u>The SS performs a 'postamble' and restores both UE and SS to their initial state so that the test can be repeated from step 1 for executions 2 and 3 (if required).</u>

Specific message contents

~~For execution:~~

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type RRC transaction identifier Integrity check info - Message authentication code  - RRC Message sequence number Activation time RAB Info - RAB identity  - CN domain identity - NAS Synchronization Indicator - Re-establishment timer Inter-system message - CHOICE System type - Frequency Band  - CHOICE GSM message - Message	Arbitrarily selects one integer between 0 to 3  SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. now  0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity. CS domain Not present Use T315  GSM Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" GSM message List GSM HANDOVER COMMAND formatted and coded according to GSM specifications as BIT STRING(1..512). The first/ leftmost/ most significant bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

[For execution 1:](#)

If the UE supports 14.4 kbps single slot:

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = data, 14.5 kbit/s radio interface rate (14.4 kbit/s user data (TCH/F14.4))

NOTE: This test case requires that the size of the HANDOVER COMMAND does not exceed 64 octets. Whenever the contents for the 04.18 HANDOVER COMMAND is changed, a check is needed to verify that size constraint is still met.

If the UE supports HSCSD:

HANDOVER COMMAND

Same as the HANDOVER COMMAND in clause 26.13.~~3-4~~1.3 of GSM 51.010, except that the Description of a multi-slot configuration supporting 14.4 kbps user data.

NOTE: This test case requires that the size of the HANDOVER COMMAND does not exceed 64 octets. Whenever the contents for the 04.18 HANDOVER COMMAND is changed, a check is needed to verify that size constraint is still met.



For execution 2:

### HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	Arbitrarily selects one integer between 0 to 3
RRC transaction identifier	
Integrity check info	
— Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
— RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	now
RAB Info	
— RAB identity	0000 0004B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
— CN domain identity	GS domain
— NAS Synchronization Indicator	Not present
— Re-establishment timer	Use T315
Inter-system message	
— CHOICE System type	GSM
— Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
— CHOICE GSM message	GSM message List
— Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as BIT STRING (1..512). The first/ leftmost/ most significant bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

If the UE supports enhanced circuit switched full rate traffic channel for 28.8 kbps user data:

### HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = data, 29.0 kbit/s radio interface rate (28.8 kbit/s user data (E-TCH/F28.8))

NOTE: This test case requires that the size of the HANDOVER COMMAND does not exceed 64 octets. Whenever the contents for the 04.18 HANDOVER COMMAND is changed, a check is needed to verify that size constraint is still met.

If the UE supports HSCSD:

### HANDOVER COMMAND

Same as the HANDOVER COMMAND in clause 26.13.3.4.1.3 of GSM 51.010, except that the Description of a multi-slot configuration supporting 28.8 kbps user data.

NOTE: This test case requires that the size of the HANDOVER COMMAND does not exceed 64 octets. Whenever the contents for the 04.18 HANDOVER COMMAND is changed, a check is needed to verify that size constraint is still met.

For execution 3:

**HANDOVER FROM UTRAN COMMAND-GSM**

Information Element	Value/remark
Message Type	Arbitrarily selects one integer between 0 to 3
RRC transaction identifier	
Integrity check info	
— Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
— RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	now
RAB Info	
— RAB identity	0000-0004B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
— CN domain identity	GS domain
— NAS Synchronization Indicator	Not present
— Re-establishment timer	Use T315
Inter-system message	
— CHOICE System type	GSM
— Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
— CHOICE GSM message	GSM message List
— Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as BIT STRING (1..512). The first/ leftmost/ most significant bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

**HANDOVER COMMAND**

Same as the HANDOVER COMMAND in clause 26.13.3-4.1.3 of GSM 51.010, except that the Description of a multi-slot configuration supporting 57.6 kbps user data.

NOTE: This test case requires that the size of the HANDOVER COMMAND does not exceed 64 octets. Whenever the contents for the 04.18 HANDOVER COMMAND is changed, a check is needed to verify that size constraint is still met.

8.3.7.2.5 Test requirement

At step 5 the SS receives a handover access burst on the traffic channel of the GSM cell indicating that the UE has switched to the GSM cell.

At step 12 the SS receives a HANDOVER COMPLETE message indicating a successful handover to the GSM cell.

~~After step 12 the ongoing call shall be continued on the GSM cell.~~

### 8.3.7.3 Inter system handover from UTRAN/To GSM/Data/Data rate down grading/Success

#### 8.3.7.3.1 Definition

#### 8.3.7.3.2 Conformance requirement

The UE shall be able to receive a HANOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

- 1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later	HANOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

- 1> if the IE "System type" has the value "GSM":

- 2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":
  - 3> set the BAND\_INDICATOR [45] to "ARFCN indicates 1800 band".

- 2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":
  - 3> set the BAND\_INDICATOR [45] to "ARFCN indicates 1900 band".

- 1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.

- 1> if the IE "RAB information List" is included in the HANOVER FROM UTRAN COMMAND message:

- 2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":
  - 3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

Upon successfully completing the handover, the UE shall:

~~1> if the USIM is present:~~

~~2> store the current START value for every CN domain in the USIM [50];~~

~~2> if the "START" stored in the USIM [50] for a CN domain is greater than or equal to the value "THRESHOLD" of the variable START\_THRESHOLD:~~

~~3> delete the ciphering and integrity keys that are stored in the USIM for that CN domain;~~

~~3> inform the deletion of these keys to upper layers.~~

~~1> if the SIM is present:~~

- ~~2> store the current START value for every CN domain in the UE;~~
- ~~2> if the "START" stored in the UE for a CN domain is greater than or equal to the value "THRESHOLD" of the variable START\_THRESHOLD;~~
- ~~3> delete the ciphering and integrity keys that are stored in the SIM for that CN domain;~~
- ~~3> inform the deletion of these keys to upper layers.~~

- 1> if there are any NAS messages with the IE "CN domain identity" set to "CS domain" for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 that have not yet been confirmed by RLC:
  - 2> retransmit those NAS messages to the network on the newly established radio connection to the target radio access technology.
- 1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

#### Reference(s)

TS 25.331 Clause 8.3.7.3, 8.3.7.4.

#### 8.3.7.3.3 Test purpose

To test that the UE hands over to the indicated channel of lower data rate in the GSM target cell when it is in the data call active state in the UTRAN serving cell and receives an HANDOVER FROM UTRAN COMMAND.

#### 8.3.7.3.4 Method of test

#### Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 26.6.5.1 or clause 26.13.1.3 (for HSCSD) shall be referenced for the default parameters of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.~~UE: CC State U10 in cell 1, one CS domain RAB and one PS domain RAB (e.g. interactive/background UL: 32kbps, DL: 32 kbps) is established (Conditional on support of CS+PS in UE).~~

#### Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports UTRAN Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM 14.4 kbps data (HSCSD or full rate traffic channel for 14.4 kbit/s user data (TCH/F14.4)),
- UE supports GSM 28.8 kbps data (HSCSD or enhanced circuit switched full rate traffic channel for 28.8 kbit/s user data (E-TCH/F28.8)),
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480 [GSM-PCS](#).
- UE support CS and PS service.

#### Foreseen final state of the UE

The UE is in CC state U10 on cell 9.

## Test Procedure

The SS ~~starts the UTRAN cell and~~ brings the UE into data call active state (CC state U10) with a suitable configuration (e.g. Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs for M = 1). The SS ~~starts GSM cell and~~ configures a traffic channel (e.g. 14.4 kbps data channel for M = 1) on the GSM cell, then sends a HANOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANOVER COMPLETE message to the SS in GSM cell.

Upon completion of the handover, depending on UE capabilities, the UE performs routing area update and (re-) establishes the connection towards the PS domain.

Depending on the PIXIT parameters the above procedure is executed maximum three times, each time with different target channel in the GSM cell.

## Expected sequence

This sequence is performed for a maximum execution counter M = 1, 2, 3, depending on the PIXIT parameters.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into UTRAN U10 state in cell 1, the configuration is: Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 1); Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 2 and 3).
2	SS			The SS configures <del>cell 9 as a GSM cell with</del> a traffic channel <u>on cell 9 (GSM cell)</u> : for GSM 14.4 kbps data (M = 1 and 2); or for GSM 28.8 kbps data (M = 3).
3	←		HANOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM 14.4 kbps data (M = 1 and 2); or for GSM 28.8 kbps data (M = 3).
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANOVER FROM UTRAN COMMAND-GSM
5	→		HANOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANOVER ACCESS	
7	→		HANOVER ACCESS	
8	→		HANOVER ACCESS	
9	←		PHYSICAL INFORMATION	
10	→		SABM	
11	←		UA	
12	→		HANOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.
13	→		ROUTING AREA UPDATE	Conditional on Class A UE.
				<u>The SS performs a 'postamble' and restores both UE and SS to their initial state so that the test can be repeated from step 1 for executions 2 and 3 (if required).</u>

## Specific message contents

For execution 1:

Same as the message contents of clause 8.3.7.2 for M = 1.

For execution 2:

Same as the message contents of clause 8.3.7.2 for M = 1.

For execution 3:

Same as the message contents of clause 8.3.7.2 for M = 2.

#### 8.3.7.3.5 Test requirement

At step 5 the SS receives a handover access burst on the traffic channel of the GSM cell indicating that the UE has switched to the GSM cell.

At step 12 the SS receives a HANOVER COMPLETE message indicating a successful handover to the GSM cell.  
~~After step 12 the ongoing call shall be continued on the GSM cell.~~

### 8.3.7.4 Inter system handover from UTRAN/To GSM/Speech/Establishment/Success

#### 8.3.7.4.1 Definition

#### 8.3.7.4.2 Conformance requirement

The UE shall be able to receive a HANOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

- 1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later	HANOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

- 1> if the IE "System type" has the value "GSM":

- 2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":
  - 3> set the BAND\_INDICATOR [45] to "ARFCN indicates 1800 band".

- 2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":
  - 3> set the BAND\_INDICATOR [45] to "ARFCN indicates 1900 band".

- 1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.

- 1> if the IE "RAB information List" is included in the HANOVER FROM UTRAN COMMAND message:

- 2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":
  - 3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

Upon successfully completing the handover, the UE shall:

- 1> if the USIM is present:
- 2> store the current START value for every CN domain in the USIM [50];
  - 2> if the "START" stored in the USIM [50] for a CN domain is greater than or equal to the value "THRESHOLD" of the variable START\_THRESHOLD:
    - 3> delete the ciphering and integrity keys that are stored in the USIM for that CN domain;
    - 3> inform the deletion of these keys to upper layers.
- 1> if the SIM is present:
- 2> store the current START value for every CN domain in the UE;
  - 2> if the "START" stored in the UE for a CN domain is greater than or equal to the value "THRESHOLD" of the variable START\_THRESHOLD:
    - 3> delete the ciphering and integrity keys that are stored in the SIM for that CN domain;
    - 3> inform the deletion of these keys to upper layers.
- 1> if there are any NAS messages with the IE "CN domain identity" set to "CS domain" for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 that have not yet been confirmed by RLC:
- 2> retransmit those NAS messages to the network on the newly established radio connection to the target radio access technology.
- 1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

#### Reference(s)

TS 25.331 Clause 8.3.7.3, 8.3.7.4.

#### 8.3.7.4.3 Test purpose

To test that the UE hands over to the indicated channel in the GSM target cell when it is in the call establishment phase in the UTRAN serving cell and receives an HANDOVER FROM UTRAN COMMAND.

#### 8.3.7.4.4 Method of test

#### Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.~~UE: CC State U1 in cell 1, no RABs are established.~~

#### Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN AMR,
- UE supports GSM FR,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480 GSM-PCS.

#### Foreseen final state of the UE

The UE is in CC state U1 on cell 9.

Test Procedure

The ~~SS starts the UTRAN cell and the~~ UE is triggered to initialise an MO speech call. During the call establishment phase, after the SS receives SETUP message the SS ~~starts GSM cell and~~ configures a dedicated channel on the GSM cell, then sends the UE an HANDOVER FROM UTRAN COMMAND indicating the dedicated channel in the target GSM cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			To trigger the UE to initialise an MO call
2	→		SETUP	U1
3	SS			The SS <del>starts the GSM cell and</del> configures a dedicated channel SDCCH <u>on the GSM cell</u> .
4	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the dedicated channel SDCCH.
5	UE			The UE accepts the handover command and switches to the GSM dedicated channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
6	→		HANDOVER ACCESS	The SS receives this burst on the dedicated channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	→		HANDOVER ACCESS	
10	←		PHYSICAL INFORMATION	
11	→		SABM	
12	←		UA	
13	→		HANDOVER COMPLETE	The SS receives the message on the dedicated channel of GSM cell.

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
RAB Info	Not present
Inter-system message	
- CHOICE System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as Variable Length BIT STRING without Length Indicator. The first/ leftmost/ most significant bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.



## HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 4 in clause 26.6.5.2 of GSM 51.010 version 8.2.0 Release 1999

## 8.3.7.4.5 Test requirement

At step 13 the SS shall receive HANDOVER COMPLETE message on the dedicated channel of the GSM cell.

CR-Form-v7

## CHANGE REQUEST

⌘ 34.123-1 CR 594 ⌘ rev 1 ⌘ Current version: 5.5.0 ⌘

For [HELP](#) on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps  ME  Radio Access Network  Core Network

**Title:** ⌘ CR to TS 34.123-1 [REL-5] Package 4 Inter-system handover test cases 8.3.7.5, 8.3.7.7, 8.3.7.9 and 8.3.7.12 (Revision of T1-031365)

**Source:** ⌘ Anite Telecoms

**Work item code:** ⌘ TEI **Date:** ⌘ 05/11/03

**Category:** ⌘ F **Release:** ⌘ REL-5

**Reason for change:** ⌘ 8.3.7.5, 8.3.7.7, 8.3.7.9, 8.3.7.12

Related ICS/IXIT statements omit GSM 1900 band.

The initial conditions are not compatible with the test procedure and expected sequence.

### 8.3.7.5

The conformance requirement is not identical to the wording in other tests and the current spec.

In the MEASUREMENT CONTROL message the band indicator only references the GSM 1800 band.

### 8.3.7.12

DPCCH\_Power\_offset value should be aligned with new default value in TS 34.108 (see T1-031597)

**Summary of change:** ⌘ 8.3.7.5, 8.3.7.7, 8.3.7.9, 8.3.7.12

GSM-PCS is included in the Related ICS/IXIT statements.

The initial conditions, test procedure and expected sequence are updated so that the initial state is not repeated.

### 8.3.7.5

The conformance requirement wording is updated.

In the MEASUREMENT CONTROL message the band indicator is modified to be either GSM 1800 or GSM 1900 band.

**8.3.7.12**

Modify DPCCH\_Power\_offset value to be aligned with new default value in TS 34.108 (see T1-031597)

**Consequences if not approved:** ⌘ The UE will not behave in the expected manner.

**Clauses affected:** ⌘ 8.3.7.5, 8.3.7.7, 8.3.7.9, 8.3.7.12

	Y	N		⌘
<b>Other specs Affected:</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other core specifications	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Test specifications	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	O&M Specifications	

**Other comments:** ⌘ Affects R99, Rel-4 and Rel-5 test cases.

### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request

### 8.3.7.5 Inter system handover from UTRAN/To GSM/Speech/Failure

#### 8.3.7.5.1 Definition

#### 8.3.7.5.2 Conformance requirement

If the UE does not succeed ~~to establish~~[in establishing](#) the connection to the other [target](#) radio access technology, it shall

1> revert back to the UTRA configuration;

1> establish the UTRA physical channel(s) used at the time for reception of HANDOVER FROM UTRAN COMMAND;

...

transmit the HANDOVER FROM UTRAN FAILURE message setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "physical channel failure".

1> When the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

2> the procedure ends.

#### Reference(s)

TS 25.331 Clause 8.3.7.5.

#### 8.3.7.5.3 Test purpose

To test that the UE reactivates the old configuration and uses this to transmit a HANDOVER FROM UTRAN FAILURE message to the network including IE "Inter-RAT Handover failure cause" which is set to "physical channel failure", when it receives an HANDOVER FROM UTRAN COMMAND and the connection to GSM for handover can not be established.

To verify that after the handover failure the UE resumes previously configured compressed mode patterns and measurements.

#### 8.3.7.5.4 Method of test

##### Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 9.

[UE: Idle state \(state 2 or state 7\) as specified in clause 7.4 of TS 34.108, depending on the CN domain\(s\) supported by the UE.](#)~~UE: CC State U10 in cell 1~~

##### Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports GSM FR,
- UE supports UTRAN AMR,

- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS.
- UE supports compressed mode (FDD only).

#### Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

#### Test Procedure

The SS ~~starts the UTRAN cell and~~ brings the UE into call active state (CC state U10) with AMR. If the UE requires compressed mode (refer ICS/IXIT), the SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message. This message is used to provide measurement control parameters (GSM RSSI) to the UE and to start compressed mode for the measurement if required according to the UE capabilities. The UE replies according to request by sending RRC: MEASUREMENT REPORT messages periodically to SS (reporting period is 1000 ms).

The SS ~~starts GSM cell without activating any dedicated channel in the cell, then~~ sends a HANOVER FROM UTRAN COMMAND indicating a dedicated channel (not configured) of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The UE receives the command and configures itself accordingly but can not complete the handover. The SS checks that the handover is failed by checking that the UE transmits the HANOVER FROM UTRAN FAILURE message to the SS using the old UTRAN configuration.

After the handover failure, the UE re-activates compressed mode (if configured) and resumes periodic measurement reporting including sending MEASUREMENT REPORT messages periodically to SS.

#### Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into U10 state in UTRAN cell 1. If the UE does not require compressed mode (refer ICS/IXIT), then goto step 1c.
1a		←	PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
1b		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
1c		←	MEASUREMENT CONTROL	SS provides GSM RSSI measurement control parameters to UE. Compressed mode for GSM RSSI measurement is started.
1d		→	MEASUREMENT REPORT	UE reports measurement results of GSM RSSI measurement to SS.
<del>2</del>		<del>SS</del>		<del>The SS configures cell 9 as a GSM cell but without any traffic channel.</del>
3		←	HANOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM FR which does not exist in the GSM cell.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANOVER FROM UTRAN COMMAND-GSM
5		→	HANOVER FROM UTRAN FAILURE	The SS receives the message via the old UTRAN configuration.
5a		→	MEASUREMENT REPORT	The SS shall verify that the UE resumes periodic measurement reporting for GSM RSSI measurements

Specific message contents

### PHYSICAL CHANNEL RECONFIGURATION (Step 1a)

Use the same message sub-type as in TS 34.108 titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links	
- DPCH compressed mode info	1
- TGPSI	Deactivate
- TGPS Status Flag	Not present
- TGCFN	
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	Undefined
- TGPL1	12
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TGPSI	2
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence	
configuration parameters	
- TGMP	GSM Initial BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	128
- T Reconfirm abort	Not Present

### MEASUREMENT CONTROL (Step 1c)

Information Element	Value/remark
Measurement Identity	15

Measurement Command	Setup
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Periodical reporting
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	Remove no inter-RAT cells
CHOICE Inter-RAT Cell Removal	0
- inter-RAT cell id	GSM
CHOICE Radio Access Technology	0
- Cell individual offset	Not present
- Cell selection and re-selection info	BSIC1
- BSIC	DCS 1800 <a href="#">or PCS 1900 (dependent on band used)</a>
- Band indicator	1
- BCCH ARFCN	1
- inter-RAT cell id	GSM
CHOICE Radio Access Technology	0
- Cell individual offset	Not present
- Cell selection and re-selection info	BSIC2
- BSIC	DCS 1800 <a href="#">or PCS 1900 (dependent on band used)</a>
- Band indicator	7
- Cell for measurement	Not present
- inter-RAT measurement quantity	Not present
- Measurement quantity for UTRAN quality estimate	Not present
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	not required
- inter-RAT reporting quantity	FALSE
UTRAN estimated quality	GSM
CHOICE system	FALSE
- Observed time difference to to GSM cell	
reporting indicator	
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOICE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOICE report criteria	
- Periodical reporting criteria	
- Amount of reporting	infinity
- Reporting interval	1000
Physical channel information elements	
- DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS status flag	Activate
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	Deactivate
- TGCFN	Not present

MEASUREMENT REPORT (Step 1d and step 5a)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to "1"
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to "7"
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

HANDOVER FROM UTRAN COMMAND-GSM

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-system message	
- System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as BIT STRING (1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1 and that the indicated target channel for GSM FR does not exist in the GSM cell

HANDOVER FROM UTRAN FAILURE

The contents of this message is identical to the HANDOVER FROM UTRAN FAILURE message specified in [9] TS 34.108 clause 9.

8.3.7.5.5 Test requirement

After step 4 the SS shall receive HANDOVER FROM UTRAN FAILURE message using the old UTRA configuration.

After step 5 the UE shall correctly report the GSM RSSI value.



.....

### 8.3.7.7 Inter system handover from UTRAN/To GSM/Speech/Failure (L1 Synchronization)

#### 8.3.7.7.1 Definition

#### 8.3.7.7.2 Conformance requirement

If the UE does not succeed in establishing the connection to the target radio access technology, it shall:

1> revert back to the UTRA configuration;

1> establish the UTRA physical channel(s) used at the time for reception of HANDOVER FROM UTRAN COMMAND;

...

1> transmit the HANDOVER FROM UTRAN FAILURE message setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "physical channel failure".

1> When the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

2> the procedure ends.

#### Reference(s)

TS 25.331 Clause 8.3.7.5

#### 8.3.7.7.3 Test purpose

To test that the UE ~~shall keep~~reactivates its old configuration and transmit a HANDOVER FROM UTRAN FAILURE message, which is set to "physical channel failure" in IE "Inter-RAT Handover failure cause", when it receives a HANDOVER FROM UTRAN COMMAND and the connection to GSM for handover cannot be established due to failure in L1 Synchronization.

#### 8.3.7.7.4 Method of test

##### Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 section 26.6.5.1 shall be referenced for the default parameters of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.~~UE: CC State U10 in cell 1~~

##### Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480 [GSM-PCS](#).

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS ~~starts the UTRAN cell and~~ brings the UE into call active state (CC state U10). The SS ~~starts GSM cell~~ ~~activates~~ ~~ing a~~ dedicated channel in the [GSM](#) cell, then sends HANDOVER FROM UTRAN COMMAND indicating a dedicated channel of the target GSM cell to the UE through DCCH using the UTRAN configuration. The UE receives the command, configures itself accordingly and sends the HANDOVER ACCESS burst. Upon receiving this burst, the SS turns off the dedicated channel indicated to the UE, so the UE cannot complete the handover. The SS checks that the UE reverts to the old UTRA configuration by checking that the UE transmits the HANDOVER FROM UTRAN FAILURE message to the SS via the old UTRAN configuration.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1.
2		SS		The SS configures <del>cell 9 as a GSM cell with</del> a traffic channel <del>on cell 9 (GSM cell)</del> .
3		←	HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: The target channel for GSM FR in GSM Cell.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5		→	HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
6		→	HANDOVER ACCESS	
7		SS		The target GSM Traffic Channel is Switched off
8		→	HANDOVER FROM UTRAN FAILURE	The SS receives the message via the old UTRAN configuration. The cause in the IE "inter-RAT change failure" is set to "physical channel failure"

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-system message - System type - Frequency Band  - CHOICE GSM message - Message	GSM Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" Single GSM message GSM HANDOVER COMMAND formatted as BIT STRING (1..512). The contents of the HANDOVER COMMAND see next table.

## HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1
---

## HANDOVER FROM UTRAN FAILURE

The contents of this message is identical to the HANDOVER FROM UTRAN FAILURE message specified in [9] TS 34.108 clause 9.

### 8.3.7.7.5 Test requirement

After step 7 the SS shall receive HANDOVER FROM UTRAN FAILURE message via the old UTRA configuration.

.....

### 8.3.7.9 Inter system handover from UTRAN/To GSM/Speech/Failure (Unsupported configuration)

#### 8.3.7.9.1 Definition

#### 8.3.7.9.2 Conformance requirement:

If:

...

- the UTRAN instructs the UE to use a non-supported configuration; or

...

the UE shall:

- 1> transmit a HANOVER FROM UTRAN FAILURE message, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the HANOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "Inter-RAT handover failure" to "configuration unacceptable";
  - 2> when the HANOVER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:
    - 3> resume normal operation as if the invalid HANOVER FROM UTRAN COMMAND message has not been received;
    - 3> and the procedure ends.

#### Reference

3GPP TS 25.331 clause 8.3.7.8

#### 8.3.7.9.3 Test purpose

To test that the UE shall keep its old configuration and transmit a HANOVER FROM UTRAN FAILURE message, which is set to "configuration unacceptable" in IE "Inter-RAT Handover failure cause", when it receives a HANOVER FROM UTRAN COMMAND message, with the IE "GSM message" containing a HANOVER COMMAND message including a configuration not supported by the UE.

#### 8.3.7.9.4 Method of test

#### Initial conditions

System Simulator : 1 UTRAN cell.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE. ~~UE: CC State U10 in cell 1~~

#### Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480 [GSM-PCS](#).

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS ~~starts the UTRAN cell and~~ brings the UE into call active state (CC state U10) with AMR [on the UTRAN cell](#). The SS then sends an HANDOVER FROM UTRAN COMMAND message including a configuration not supported by the UE in the HANDOVER COMMAND that is contained in the IE "GSM message", to the UE through DCCH using the UTRAN configuration. The UE receives the command and finds that the configuration given in Inter Rat message is not supported. The SS checks that the UE reverts to the old UTRA configuration by checking that the UE transmits the HANDOVER FROM UTRAN FAILURE message to the SS using the old UTRA configuration.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2	←		HANDOVER FROM UTRAN COMMAND -GSM	Send using the UTRAN configuration and the message carries an unsupported configuration.
3	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message via the old UTRAN configuration.

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-system message - System type - Frequency Band  - CHOICE GSM message - Message	GSM Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" Single GSM message GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the frequency band is set to a value not supported by the UE.

HANDOVER FROM UTRAN FAILURE

The contents of this message is identical to the HANDOVER FROM UTRAN FAILURE message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-RAT handover failure -Inter-RAT handover failure cause	configuration unacceptable

#### 8.3.7.9.5 Test requirement

After step 2 the SS shall receive a HANDOVER FROM UTRAN FAILURE message via the old UTRA configuration.

.....

### 8.3.7.12 Inter system handover from UTRAN/To GSM/Speech/Failure (Physical channel Failure and Reversion Failure)

#### 8.3.7.12.1 Definition

#### 8.3.7.12.2 Conformance requirement:

If the UE does not succeed in establishing the connection to the target radio access technology, it shall:

- 1> revert back to the UTRA configuration;
- 1> establish the UTRA physical channel(s) used at the time for reception of HANDOVER FROM UTRAN COMMAND;
- 1> if the UE does not succeed to establish the UTRA physical channel(s):
  - 2> perform a cell update procedure according to subclause 8.3.1 in TS 25.331 with cause "Radio link failure";
  - 2> when the cell update procedure has completed successfully:
    - 3> proceed as below.
- 1> transmit the HANDOVER FROM UTRAN FAILURE message setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "Inter-RAT handover failure" to "physical channel failure".
- 1> When the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:
  - 2> the procedure ends.

#### Reference

3GPP TS 25.331 clause 8.3.7.5

#### 8.3.7.12.3 Test purpose

The UE shall perform a cell update when the UE fails to revert to the old configuration after the detection of physical channel failure in the target RAT cell as given in the HANDOVER FROM UTRAN COMMAND message. After the UE completes the cell update procedure, the UE shall transmit a HANDOVER FROM UTRAN FAILURE message on the DCCH using AM RLC, including IE "failure cause" set to "physical channel failure".

#### 8.3.7.12.4 Method of test

#### Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 11.10-1 section 26.6.5.1 shall be referenced for the default parameters of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE. ~~UE: CC State U10 in cell 1~~

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, [GSM-PCS](#).

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS ~~starts the UTRAN cell~~ and brings the UE into call active state (CC state U10) with AMR [on the UTRAN cell](#). The SS ~~starts GSM cell without activating any dedicated channel in the cell, then~~ sends a HANDOVER FROM UTRAN COMMAND indicating a dedicated channel [\(not configured\)](#) of the target GSM cell to the UE through DCCH using the UTRAN configuration. The UE receives the command and configures itself accordingly but cannot complete the handover and wants to revert to the old configuration, but the UE cannot revert to the old configuration because the SS released the old configuration. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits the HANDOVER FROM UTRAN FAILURE message to the SS using the new UTRA configuration, on the DCCH using AM RLC, setting the value of IE "failure cause" to " physical channel failure".

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2	SS			<del>The SS configures cell 9 as a GSM cell but without any traffic channel.</del>
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send using the old UTRA configuration and the message indicates: the target channel for GSM FR.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER COMMAND message that is contained within the HANDOVER FROM UTRAN COMMAND -GSM message
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell. Upon receiving this burst, SS removes both the target GSM Traffic Channel and the UTRA physical channel (DPCH) allocated to the mobile before handover command transmission. As a result not only the handover will fail, but also the reversion to the old UTRA configuration.
6	→		CELL UPDATE	The value "radio link failure" shall be set in IE "Cell update cause".
7	←		CELL UPDATE CONFIRM	This message include IE "Physical channel information elements".
8				The SS configures the dedicated physical channel according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
9	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
10	→		HANDOVER FROM UTRAN FAILURE	The IE "failure cause" shall be set to "physical channel failure"



## Specific message contents

Same as the message contents of clause 8.3.7.1 for Execution 3.

## CELL UPDATE (Step 6)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	"radio link failure"

## CELL UPDATE CONFIRM (Step 7) (FDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 3
RRC State indicator	CELL_DCH
CHOICE channel requirement	Uplink DPCH info
-UplinkDPCH Info	Same as RRC CONNECTION SETUP message used to move to initial condition
- DPCCH power offset	<del>-80dB</del> (i.e. ASN.1 IE value of -40) <del>-6dB</del>
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
- Scrambling code type	Long
- Scrambling code number	0 (0 to 16777215)
- Number of DPDCH	Not Present(1)
- spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- Number of FBI bit	Reference to TS34.108 clause 6.10 Parameter Set
- Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set
Downlink information common for all radio links	Same as RRC CONNECTION SETUP message used to move to initial condition
CHOICE Mode	FDD
- Downlink DPCH info common for all RL	Initialise
- Timing indicator	Not Present
- CFN-targetSFN frame offset	
- Downlink DPCH power control information	
- DPC mode	0 (single)
- CHOICE mode	FDD
- Power offset PPilot-DPCH	0
- DL rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or Flexible Position	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512
Downlink information for each radio links	
- Primary CPICH info	
- Primary scrambling code	100
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	Not Present
- Downlink DPCH info for each RL	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	0 chips
- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	2
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	SF-1(SF is reference to TS34.108 clause 6.10 Parameter Set)
- Scrambling code change	No change
- TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH	Not Present

### CELL UPDATE CONFIRM (Step 7) (3.84 Mcps TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS34.108, clause 9, with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 3
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to TS34.108 clause 5.1 Test frequencies
Maximum allowed UL TX power	30dBm
CHOICE Mode	TDD
Downlink information for each radio links	
- Primary CCPCH info	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- CHOICE SyncCase	Not Present
- Cell Parameters ID	Not Present
- Block STTD indicator	FALSE
- Downlink DPCH info for each RL	
- CHOICE mode	TDD
- DL CCTrCh List	
- TFCS ID	1
- Time info	
- Activation time	Not Present (default)
- Duration	Not Present (default)
- Common timeslot info	Not Present (default)
- Downlink DPCH timeslots and codes	Not Present (default)
- UL CCTrCh TPC List	Not Present (default)

#### CELL UPDATE CONFIRM (Step 7) (1.28 Mcps TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS34.108, clause 9, with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 3
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to TS34.108 clause 5.1 Test frequencies
Maximum allowed UL TX power	30dBm
CHOICE Mode	TDD
Downlink information for each radio links	
- Primary CCPCH info	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- TSTD indicator	FALSE
- Cell Parameters ID	Not Present
- Block STTD indicator	FALSE
- Downlink DPCH info for each RL	
- CHOICE mode	TDD
- DL CCTrCh List	
- TFCS ID	1
- Time info	
- Activation time	Not Present (default)
- Duration	Not Present (default)
- Common timeslot info	Not Present (default)
- Downlink DPCH timeslots and codes	Not Present (default)
- UL CCTrCh TPC List	Not Present (default)

#### HANDOVER FROM UTRAN COMMAND

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-system message - System type - Frequency Band  - CHOICE GSM message - Message	GSM Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" Single GSM message GSM HANDOVER COMMAND formatted as BIT STRING (1..512). The contents of the HANDOVER COMMAND see next table.

#### HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1
---

#### HANDOVER FROM UTRAN FAILURE

The contents of this message is identical to the HANDOVER FROM UTRAN FAILURE message specified in [9] TS 34.108 clause 9.

##### 8.3.7.12.5 Test requirement

After step 5 the SS shall receive an CELL UPDATE message.

After step 8 the SS shall receive an PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

After step 9 the SS shall receive an INTER-SYSTEM HANDOVER FAILURE message via the new UTRA configuration.

CR-Form-v7
CHANGE REQUEST
⌘ <b>34.123-1 CR 621</b> ⌘ rev <b>2</b> ⌘ Current version: <b>5.5.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Modification to RRC TC 8.3.3.1 – Assign different C-RNTI in UTRAN MOBILITY INFORMATION (Revision of CR T1-031458 and T1-031572)		
<b>Source:</b>	⌘ Anite Telecoms		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 05/11/03
<b>Category:</b>	⌘ F	<b>Release:</b>	⌘ REL-5

<b>Reason for change:</b>	⌘ 1.The purpose of test case is to check that new identities are used by the UE after it receives a UTRAN MOBILITY INFORMATION message. However, the specific message contents shown in clause 8.3.3.1.4 for the UTRAN MOBILITY INFORMATION message do not change the C-RNTI from the value assigned in the previous RADIO BEARER SETUP.
	2. The U-RNTI specified in the CELL UPDATE and CELL UPDATE CONFIRM messages should change after execution of the UTRAN MOBILITY INFORMATION procedure. This is currently not shown in the specific message contents.
<b>Summary of change:</b>	⌘ 1. Modify the “New C-RNTI” value in the specific message contents to be different (and specify the value currently employed in the approved TTCN TS 34.123-3)
	2. Modify the specific message contents of the CELL UPDATE and CELL UPDATE CONFIRM messages to show the correct U_RNTI before and after the UTRAN MOBILITY INFORMATION procedure.
<b>Consequences if not approved:</b>	⌘ The test case will not test the purpose intended.

<b>Clauses affected:</b>	⌘ 8.3.3.1										
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;">N</td> </tr> <tr> <td style="padding: 2px 5px;"> </td> <td style="padding: 2px 5px;">X</td> </tr> <tr> <td style="padding: 2px 5px;"> </td> <td style="padding: 2px 5px;">X</td> </tr> <tr> <td style="padding: 2px 5px;"> </td> <td style="padding: 2px 5px;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications	⌘
Y	N										
	X										
	X										
	X										
		Test specifications									
		O&M Specifications									
<b>Other comments:</b>	⌘ Affects R99, Rel-4 and Rel-5 test cases.										

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☒ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request

### 8.3.3 UTRAN Mobility Information

#### 8.3.3.1 UTRAN Mobility Information: Success

##### 8.3.3.1.1 Definition

##### 8.3.3.1.2 Conformance requirement

When the UE receives a UTRAN MOBILITY INFORMATION message, it shall:

- 1> act on received information elements as specified in TS 25.331 subclause 8.6;
- 1> if the IE "UE Timers and constants in connected mode" is present:
  - 2> store the values of the IE "UE Timers and constants in connected mode" in the variable TIMERS\_AND\_CONSTANTS, replacing any previously stored value for each timer and constant; and
  - 2> for each updated timer value:
    - 3> start using the new value next time the timer is started;

NOTE: If a new value of timer T305 is included in the IE "UE Timers and constants in connected mode", and the old value of timer T305 is "infinity", the UE will not use the new value of the timer T305 until the next cell reselection.

- 2> for each updated constant value:
  - 3> start using the new value directly;

...

- 1> transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC;

....

If the IE "New U-RNTI" is included in a received message, the UE shall:

- 1> store the value in the variable U\_RNTI, replacing any old stored value.

...

If the IE "New C-RNTI" is included, the UE shall:

- 1> store the value in the variable C\_RNTI, replacing any old stored value;
- 1> use that C-RNTI when using common transport channels of type RACH, FACH and CPCH in the current cell.

...

In case of cell update procedure the UE shall transmit a CELL UPDATE message.

The UE shall set the IEs in the CELL UPDATE message as follows:

...

- 1> set the IE "U-RNTI" to the value of the variable U\_RNTI;

...

#### Reference

3GPP TS 25.331 clauses 8.3.3, 8.6.3.9, 8.6.3.10, 8.3.1.3.

### 8.3.3.1.3 Test purpose

1. To confirm that the UE starts to use the new identities after it receives a UTRAN MOBILITY INFORMATION message from the SS.

### 8.3.3.1.4 Method of test

#### Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH\_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

#### Specific Message Contents

For system information block 1 of Cell 1 (gives IE's which are different from defaults given in 34.108 subclause 6.1) to be transmitted before idle update preamble.

#### System Information Block type 1

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
-T305	10

#### Test Procedure

Initially, the UE is in CELL\_FACH state and it has been assigned a C-RNTI and U-RNTI. SS waits for T305 to expire. The UE shall transmit a CELL UPDATE message. SS sends CELL UPDATE CONFIRM message to the UE on the downlink CCCH. Then SS transmits an UTRAN MOBILITY INFORMATION message which includes new C-RNTI and U-RNTI to the UE. Then the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message using the assigned new C-RNTI in MAC header as confirmation. SS waits for UE to perform periodic cell updating. When SS received a CELL UPDATE message, SS checks that UE uses the new U-RNTI in the CELL UPDATE message. Then SS sends CELL UPDATE CONFIRM on the downlink CCCH. SS waits for UE to perform periodic cell updating. When SS received a CELL UPDATE message, SS sends CELL UPDATE CONFIRM on the downlink CCCH to end the test procedure.



## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of the UE is CELL_FACH state. UE has been allocated both C-RNTI and U-RNTI during RRC connection establishment phase.
1a				SS waits for a period up to timer T305 to allow the UE to start performing a cell updating procedure.
1b		→	CELL UPDATE	
1c		←	CELL UPDATE CONFIRM	
2		←	UTRAN MOBILITY INFORMATION	Contains new C-RNTI and U-RNTI identities and a value for T305 that is different from the value defined in the system information.
3		→	UTRAN MOBILITY INFORMATION CONFIRM	The assigned new C-RNTI shall be included in MAC header.
4				SS wait for T305 (same as the value defined in system information) to expire.
5		→	CELL UPDATE	UE shall trigger cell updating. The message shall indicate the same U-RNTI assigned in the UTRAN MOBILITY INFORMATION message in step 2.
6		←	CELL UPDATE CONFIRM	
7				SS wait for T305 (the new value as specified in step 2) to expire.
8		→	CELL UPDATE	UE shall trigger cell updating. The message shall indicate the same U-RNTI assigned in the UTRAN MOBILITY INFORMATION message in step 2.
9		←	CELL UPDATE CONFIRM	

## Specific Message Content

## UTRAN MOBILITY INFORMATION (Step 2)

Use the same message sub-type as in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI	'0000 0000 0001'
- SRNC Identity	'0101 0101 0101 0101 0101'
- S-RNTI	<del>'1010 1010 1010 1010'</del> <u>'0000 0000 0000 1111'</u>
New C-RNTI	
UE Timers and constants in connected mode	
- T305	5 minutes

## UTRAN MOBILITY INFORMATION CONFIRM (Step 3)

Only the message type IE is checked in this message.

CELL UPDATE (Step 1b)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH.

CELL UPDATE (Step ~~4b~~, 5 and 8)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	Check to see if set to '0000 0000 0001'
- SRNC Identity	Check to see if set to '0101 0101 0101 0101 0101'
- S-RNTI	Check to see if set to 'periodical cell updating'
Cell Update Cause	Check to see if set to 'periodical cell updating'

CELL UPDATE CONFIRM (Step 1c, ~~6 and 9~~)

Use the same message sub-type as in TS 34.108, clause 9.

CELL UPDATE CONFIRM (Step 6 and 9)

Use the same message sub-type as in TS 34.108, clause 9 on the downlink CCCH, with the exception of the following IEs:

Information Element	Value/remark
<u>U-RNTI</u>	<u>Check to see if set to '0000 0000 0001'</u>
<u>- SRNC Identity</u>	<u>Check to see if set to '0101 0101 0101 0101 0101'</u>
<u>- S-RNTI</u>	<u>Check to see if set to '0101 0101 0101 0101 0101'</u>

## 8.3.3.1.5 Test requirement

After step 2 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH that using the assigned new C-RNTI in MAC header.

After step 4 and 7 the UE shall transmit a CELL UPDATE message on the uplink CCCH with IE "Cell update cause" set to "periodical cell updating". The IE "U-RNTI" shall be identical to the IE "New RNTI" found in UTRAN MOBILITY INFORMATION message sent by the SS in step 2.

## CHANGE REQUEST

⌘ **34.123-1 CR 609** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections and updates on 8.1 RRC Connection Management Procedure for TDD mode
<b>Source:</b>	⌘ Siemens AG
<b>Work item code:</b>	⌘ TEI <b>Date:</b> ⌘ 24/10/2003
<b>Category:</b>	⌘ <b>F</b> <b>Release:</b> ⌘ Rel-5
	<i>Use one of the following categories:</i>
	<b>F</b> (correction)
	<b>A</b> (corresponds to a correction in an earlier release)
	<b>B</b> (addition of feature),
	<b>C</b> (functional modification of feature)
	<b>D</b> (editorial modification)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .
	<i>Use one of the following releases:</i>
	<b>2</b> (GSM Phase 2)
	<b>R96</b> (Release 1996)
	<b>R97</b> (Release 1997)
	<b>R98</b> (Release 1998)
	<b>R99</b> (Release 1999)
	<b>Rel-4</b> (Release 4)
	<b>Rel-5</b> (Release 5)
	<b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ Some corrections and updates are needed to apply RRC Connection Management Procedure to TDD mode
<b>Summary of change:</b>	⌘
	8.1.1.5 Paging for notification of BCCH modification in connected mode (CELL_PCH)
	<ul style="list-style-type: none"><li>• SYSTEM INFORMATION BLOCK TYPE 5 (Step 3) for TDD included (two tables, one for 3.84 Mcps option and one for 1.28 Mcps option)</li><li>• Expected sequence and Test Procedure are also updated in step 3</li></ul>
	8.1.1.6 Paging for notification of BCCH modification in connected mode (URA_PCH)
	<ul style="list-style-type: none"><li>• SYSTEM INFORMATION BLOCK TYPE 5 (Step 3) for TDD included (two tables, one for 3.84 Mcps option and one for 1.28 Mcps option)</li><li>• Expected sequence and Test Procedure are also updated in step 3</li></ul>
	In some clauses, references to Annex A corrected to clause 9 of TS34.108.
	<ul style="list-style-type: none"><li>• 8.1.1.5, 8.1.2.5, 8.1.2.6, 8.1.5.3</li></ul>
	8.1.3.9 RRC Connection Release in CELL_DCH state (Network Authentication Failure): Success
	<ul style="list-style-type: none"><li>• Values for TDD in Table 8.1.3.9 included.</li><li>• MEASUREMENT REPORT (Step 1) for TDD included, including event 1g for TDD instead of event 1a for FDD.</li><li>• ACTIVE SET UPDATE is applicable for FDD only.</li></ul>
	8.1.5.1 UE Capability in CELL_DCH state: Success

- UE CAPABILITY ENQUIRY (Steps 4) (TDD) included.

Revision of T1-031420, including CR number

**Consequences if not approved:** ⌘ TDD option could not be tested properly

**Clauses affected:** ⌘ 8.1.1, 8.1.2, 8.1.3, 8.1.4, 8.1.5

	Y	N		⌘
<b>Other specs affected:</b>			Other core specifications	
			Test specifications	
			O&M Specifications	

**Other comments:** ⌘

### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## <Start of changes>

### 8.1.1.5 Paging for notification of BCCH modification in connected mode (CELL\_PCH)

#### 8.1.1.5.1 Definition

#### 8.1.1.5.2 Conformance requirement

A UE in CELL\_PCH state shall receive the paging information for all its monitored paging occasions. For a UE in CELL\_PCH state, the paging occasions depend also on the IE "UTRAN DRX cycle length coefficient" and the IE "RRC State Indicator", as specified in TS 25.331 subclauses 8.6.3.2 and 8.6.3.3 respectively.

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

...

If the IE "BCCH modification info" is included, any UE in CELL\_PCH state shall perform the actions as specified in TS 25.331 subclause 8.1.1 in addition to any actions caused by the IE "Paging record" occurrences in the message.

The UE shall:

- 1> compare the value of IE "MIB value tag" in the IE "BCCH modification info" with the value tag stored for the master information block in variable VALUE\_TAG.

- 1> if the value tags differ:

- 2> read the master information block on BCH;

- 2> if the value tag of the master information block in the system information is the same as the value in IE "MIB value tag" in "BCCH modification info" but different from the value tag stored in the variable VALUE\_TAG:

- 3> perform actions as specified in TS 25.331 subclause 8.1.1.5.

...

Upon reception of the master information block, the UE shall:

- 1> compare the value tag in the master information block with the value tag stored for this cell and this PLMN in the variable VALUE\_TAG;

- 1> if the value tags differ:

- 2> store the value tag into the variable VALUE\_TAG for the master information block;

- 2> read and store scheduling information included in the master information block.

....

For all system information blocks or scheduling blocks that are supported by the UE referenced in the master information block or the scheduling blocks, the UE shall perform the following actions:

- 1> for all system information blocks with area scope "PLMN" or "Equivalent PLMN" that use value tags:

- 2> compare the value tag read in scheduling information for that system information block with the value stored within the variable VALUE\_TAG for that system information block;

- 2> if the value tags differ:

- 3> store the value tag read in scheduling information for that system information block into the variable VALUE\_TAG;

- 3> read and store the IEs of that system information block.

...

## Reference

3GPP TS 25.331 clause 8.1.1, 8.1.2.

### 8.1.1.5.3 Test purpose

To confirm that the UE, in addition to any actions caused by the IE "Paging record" occurrences in the PAGING TYPE 1 message, checks the new value tag of the master information block, and read the SYSTEM INFORMATION messages after it receives a PAGING TYPE 1 message which includes the IE "BCCH Modification Information".

### 8.1.1.5.4 Method of test

## Initial Condition

System Simulator: 1 cell.

UE: CELL\_PCH state (state 6-12) as specified in clause 7.4 of TS 34.108 with valid a U-RNTI assigned to it.

## Test Procedure

The SS transmits a PAGING TYPE 1 message on the paging occasions assigned to the UE. The paging identity is equal to the U-RNTI assigned earlier. The UE shall respond with a CELL UPDATE message and set IE "cell update cause" to "paging response". The PAGING TYPE 1 message shall also include the IE "BCCH Modification Information" indicating the time when the first modified master information block is available. Before the starting time, SS continuously broadcast the original MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on the BCCH mapped to BCH transport channel. SS maintains this status until the SFN, which corresponds to the modification time, is reached. Then it transmits the new master information block followed by the new SYSTEM INFORMATION BLOCK TYPE 5 message. In the new SIB TYPE 5 message, the IE "Available Signature" [for FDD](#), ["Available Channelisation codes indices " for TDD 3.84 Mcps option or "Available SYNC\\_UL codes indices " for TDD 1.28 Mcps option](#) is different when compared to the original SIB TYPE 5 message. At the paging occasion, SS transmits a new PAGING TYPE 1 message. This message addresses the UE using its U-RNTI. The UE shall respond with a CELL UPDATE message and set IE "cell update cause" to "paging response". The SS shall transmit a CELL UPDATE CONFIRM message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2		←	PAGING TYPE 1	SS transmits the paging message which comprises IE "BCCH Modification Information", with the "Value Tag" changed from the "MIB Value Tag" of the current Master Information Block. Also the modification time is set to 2048 radio frame from the current SFN. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH.
2a		→	CELL UPDATE	
2b		←	CELL UPDATE CONFIRM	
3		←	MASTER INFORMATION BLOCK	At the SFN indicated by the BCCH modification time, SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting.  <a href="#">For FDD, a</a> At the same time, SS starts to transmit the affected SIB TYPE 6 continuously. The value of IE "Available Signature" is changed from "0000 0000 1111 1111(B)" to "1111 1111 0000 0000(B)".  <a href="#">For TDD 3.84 Mcps option, at the same time, SS starts to transmit the affected SIB TYPE 6 continuously. The value of IE "Available Channelisation codes indices" is changed according to test purposes.</a>  <a href="#">For TDD 1.28 Mcps option, at the same time, SS starts to transmit the affected SIB TYPE 6 continuously. The value of IE "Available SYNC UL codes indices" is changed according to test purposes.</a>
		←	SYSTEM INFORMATION BLOCK TYPE 6	
4		←	PAGING TYPE 1	SS transmits this message continuously on the PCCH at the correct paging occasion.
5		→	CELL UPDATE	
6		←	CELL UPDATE CONFIRM	See message content.

Specific Message Contents

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Message Type	Only 1 entry
Paging record list	
Paging record	UTRAN identity Equal to the U-RNTI assigned earlier.
- CHOICE Used paging identity	
- U-RNTI	
- SRNC Identity	
- S-RNTI	
- CN originated page to connected mode UE	Not Present
BCCH modification info	2 Set to (current SFN + 2048)
- MIB Value Tag	
- BCCH Modification time	

CELL UPDATE (Step 2a)

Check to see if the same message type found in [Annex A\[9\]](#) (TS 34.108) Clause 9 is received, with the following exceptions:

Information Element	Value/remark
U-RNTI	Checked to see if it is set to the same values as in step 2
- SRNC identity	
- S-RNTI	Paging response
Cell update cause	

CELL UPDATE CONFIRM (Step 2b)

Use the same message type found in clause [Annex A\[9\]](#) (TS 34.108) Clause 9., with the following exception:

Information Element	Value/remark
RRC State indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3

MASTER INFORMATION BLOCK (Step 3)

Information Element	Value/remark
MIB Value tag	2

SYSTEM INFORMATION BLOCK TYPE 5 (Step 3) ([FDD](#))

Use the same message type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
- PRACH system information	FDD '1111 1111 0000 0000'B
- PRACH info	
- CHOICE mode	
- Available Signature	

[SYSTEM INFORMATION BLOCK TYPE 5 \(Step 3\) \(TDD 3.84 Mcps option\)](#)

Use the same message type found in clause 6.1 of TS 34.108, with the following exception.

<a href="#">Information Element</a>	<a href="#">Value/remark</a>
<a href="#">- PRACH system information</a>	TDD 3.84 Mcps option <a href="#">To be defined (each bit indicates availability of a channelisation code index)</a>
<a href="#">- PRACH info</a>	
<a href="#">- CHOICE mode</a>	
<a href="#">- CHOICE TDD option</a>	
<a href="#">- Available Channelisation codes indices</a>	



[SYSTEM INFORMATION BLOCK TYPE 5 \(Step 3\) \(TDD 1.28 Mcps option\)](#)

Use the same message type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
<a href="#">- PRACH system information</a> <a href="#">- PRACH info</a> <a href="#">- CHOICE mode</a> <a href="#">- CHOICE TDD option</a> <a href="#">- Available SYNC_UL codes indices</a>	<a href="#">TDD</a> <a href="#">1.28 Mcps option</a> <a href="#">To be defined (each bit indicates availability of a SYNC_UL code index)</a>

PAGING TYPE 1 (Step 4)

Information Element	Value/remark
Message Type Paging record list Paging record - CHOICE Used paging identity - U-RNTI - SRNC Identity - S-RNTI - CN originated page to connected mode UE BCCH modification info	Only 1 entry  UTRAN identity Equal to the U-RNTI assigned earlier.  Not Present Not Present

CELL UPDATE (Step 5)

Check to see if the same message type found in TS 34.108, clause 9 is received, with the following exceptions:

Information Element	Value/remark
U-RNTI  - SRNC identity - S-RNTI Cell update cause	Checked to see if it is set to the same values as in step 4  Paging response

CELL UPDATE CONFIRM (Step 6)

Use the same message type found in ~~Annex A[9]~~ (TS 34.108) Clause 9., with the following exception:

Information Element	Value/remark
RRC State indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3

8.1.1.5.5 Test requirement

After step 2 the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "paging response", using an allowed signature according to original IE "Available signature" in SYSTEM INFORMATION BLOCK TYPE 5.

After step 4 the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "paging response", using an allowed signature according to modified IE "Available signature" in SYSTEM INFORMATION BLOCK TYPE 5.

8.1.1.6 Paging for notification of BCCH modification in connected mode (URA\_PCH)

8.1.1.6.1 Definition

8.1.1.6.2 Conformance requirement

A UE in URA\_PCH state shall receive the paging information for all its monitored paging occasions. For a UE in URA\_PCH state, the paging occasions depend also on the IE "UTRAN DRX cycle length coefficient" and the IE "RRC State Indicator", as specified in TS 25.331 subclauses 8.6.3.2 and 8.6.3.3 respectively.

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

...

If the IE "BCCH modification info" is included, any UE in URA\_PCH state shall perform the actions as specified in TS 25.331 subclause 8.1.1 in addition to any actions caused by the IE "Paging record" occurrences in the message as specified above.

The UE shall:

1> compare the value of IE "MIB value tag" in the IE "BCCH modification info" with the value tag stored for the master information block in variable VALUE\_TAG.

1> if the value tags differ:

2> read the master information block on BCH;

2> if the value tag of the master information block in the system information is the same as the value in IE "MIB value tag" in "BCCH modification info" but different from the value tag stored in the variable VALUE\_TAG:

3> perform actions as specified in subclause 8.1.1.5.

...

Upon reception of the master information block, the UE shall:

1> compare the value tag in the master information block with the value tag stored for this cell and this PLMN in the variable VALUE\_TAG;

1> if the value tags differ:

2> store the value tag into the variable VALUE\_TAG for the master information block;

2> read and store scheduling information included in the master information block.

....

For all system information blocks or scheduling blocks that are supported by the UE referenced in the master information block or the scheduling blocks, the UE shall perform the following actions:

1> for all system information blocks with area scope "PLMN" or "Equivalent PLMN" that use value tags:

2> compare the value tag read in scheduling information for that system information block with the value stored within the variable VALUE\_TAG for that system information block;

2> if the value tags differ:

3> store the value tag read in scheduling information for that system information block into the variable VALUE\_TAG;

3> read and store the IEs of that system information block.

...

## Reference

3GPP TS 25.331 clause 8.1.1, 8.1.2.

### 8.1.1.6.3 Test purpose

To confirm that the UE checks the included new value tag of the master information block and reads the relevant SYSTEM INFORMATION block(s) after it receives a PAGING TYPE 1 message which includes the IE "BCCH Modification Information".

### 8.1.1.6.4 Method of test

## Initial Condition

System Simulator: 1 cell

UE: URA\_PCH state (state 6-13) as specified in clause 7.4 of TS 34.108 with a valid U-RNTI assigned.

## Test Procedure

The SS transmits a PAGING TYPE 1 message on the paging occasions assigned to the UE. The message shall include the IE "BCCH Modification Information" indicating the time when the first modified master information block is available. Before the starting time, SS continuously broadcast the original MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on the BCCH mapped to BCH transport channel. SS maintains this status until the SFN which corresponds to the modification time is reached. Then it transmits the new master information block followed by the new SYSTEM INFORMATION BLOCK TYPE 5 message. In the new SIB TYPE 5 message, the IE "Available Signature" [for FDD](#), ["Available Channelisation codes indices " for TDD 3.84 Mcps option or "Available SYNC\\_UL codes indices " for TDD 1.28 Mcps option](#) is different when compared to the original SIB TYPE 5 message. At the next paging occasion, SS transmits a new PAGING TYPE 1 message. This message addresses the UE using its U-RNTI and the "paging cause" IE set to a terminating call type that is supported by the UE. The UE shall respond with a CELL UPDATE message and set IE "cell update cause" to "paging response". The SS shall transmit a CELL UPDATE CONFIRM message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2		←	PAGING TYPE 1	SS transmits the paging message which comprises IE "BCCH Modification Information", with the "Value Tag" changed from the "MIB Value Tag" of the current Master Information Block. Also the modification time is set to 2048 radio frame from the current SFN. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH.
3		←	MASTER INFORMATION BLOCK	At the SFN indicated by the BCCH modification time, SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting.  <a href="#">For FDD, a</a> At the same time, SS starts to transmit the affected SIB TYPE 6 message continuously. The value of IE "Available Signature" is changed from "0000 0000 1111 1111(B)" to "1111 1111 0000 0000(B)".  <a href="#">For TDD 3.84 Mcps option, at the same time, SS starts to transmit the affected SIB TYPE 6 continuously. The value of IE "Available Channelisation codes indices " is changed according to test purposes.</a>  <a href="#">For TDD 1.28 Mcps option, at the same time, SS starts to transmit the affected SIB TYPE 6 continuously. The value of IE "Available SYNC_UL codes indices " is changed according to test purposes.</a>
		←	SYSTEM INFORMATION BLOCK TYPE 6	
4		←	PAGING TYPE 1	SS transmits this message continuously on the PCCH at the correct occasion.
5		→	CELL UPDATE	
6		←	CELL UPDATE CONFIRM	See message content.

Specific Message Contents

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Message Type	
Paging record list	Not Present
BCCH modification info	
- MIB Value Tag	2
- BCCH Modification time	Set to (current SFN + 2048)

MASTER INFORMATION BLOCK (Step 3)

Information Element	Value/remark
MIB Value tag	2

SYSTEM INFORMATION BLOCK TYPE 5 (Step 3)

Use the same message type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
- PRACH system information - PRACH info - CHOICE mode - Available Signature	FDD '1111 1111 0000 0000'B

[SYSTEM INFORMATION BLOCK TYPE 5 \(Step 3\) \(TDD 3.84 Mcps option\)](#)

Use the same message type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
- <a href="#">PRACH system information</a> - <a href="#">PRACH info</a> - <a href="#">CHOICE mode</a> - <a href="#">CHOICE TDD option</a> - <a href="#">Available Channelisation codes indices</a>	TDD <a href="#">3.84 Mcps option</a> To be defined (each bit indicates availability of a channelisation code index)

[SYSTEM INFORMATION BLOCK TYPE 5 \(Step 3\) \(TDD 1.28 Mcps option\)](#)

Use the same message type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
- <a href="#">PRACH system information</a> - <a href="#">PRACH info</a> - <a href="#">CHOICE mode</a> - <a href="#">CHOICE TDD option</a> - <a href="#">Available SYNC UL codes indices</a>	TDD <a href="#">1.28 Mcps option</a> To be defined (each bit indicates availability of a SYNC UL code index)

PAGING TYPE 1 (Step 4)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	Equal to the U-RNTI assigned earlier.
- SRNC Identity	
- S-RNTI	
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

CELL UPDATE (Step 5)

Check to see if the same message type found in TS 34.108, clause 9 is received, with the following exceptions:

Information Element	Value/remark
U-RNTI	Checked to see if it is set to the same values as in step 4
- SRNC identity	
- S-RNTI	
Cell update cause	Paging response

## CELL UPDATE CONFIRM (Step 6)

Use the same message type found in TS 34.108, clause 9 with the following exceptions.

Information Element	Value/Remarks
RRC State indicator	URA_PCH
UTRAN DRX cycle length coefficient	3

### 8.1.1.6.5 Test requirement

After step 4, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "paging response", using an allowed signature according to modified IE "Available signature" in SYSTEM INFORMATION BLOCK TYPE 5.

### 8.1.1.7 Paging for Connection in connected mode (CELL\_DCH)

#### 8.1.1.7.1 Definition

#### 8.1.1.7.2 Conformance requirement

When the UE receives a PAGING TYPE 2 message, it shall not affect the state of any other ongoing RRC procedures, when not stated otherwise elsewhere.

The UE shall:

- 1> indicate reception of paging; and
- 1> forward the IE "Paging cause" and the IE "Paging record type identifier" to upper layers.

...

In the UE, the initial direct transfer procedure shall be initiated, when the upper layers request establishment of a signalling connection. This request also includes a request for the transfer of a NAS message.

The UE shall, in the INITIAL DIRECT TRANSFER message:

- 1> set the IE "NAS message" as received from upper layers; and
- 1> set the IE "CN domain identity" as indicated by the upper layers; and
- 1> set the IE "Intra Domain NAS Node Selector" as follows:
  - 2> derive the IE "Intra Domain NAS Node Selector" from TMSI/PM-TSI, IMSI, or IMEI; and
  - 2> provide the coding of the IE "Intra Domain NAS Node Selector" according to the following priorities:
    1. derive the routing parameter for IDNNS from TMSI (CS domain) or PTMSI (PS domain) whenever a valid TMSI/PTMSI is available;
    2. base the routing parameter for IDNNS on IMSI when no valid TMSI/PTMSI is available;
    3. base the routing parameter for IDNNS on IMEI only if no (U)SIM is inserted in the UE.

...

The UE shall:

- 1> transmit the INITIAL DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3;
- 1> when the INITIAL DIRECT TRANSFER message has been submitted to lower layers for transmission:
  - 2> confirm the establishment of a signalling connection to upper layers; and
  - 2> add the signalling connection with the identity indicated by the IE "CN domain identity" in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS.
- 1> when the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC:
  - 2> the procedure ends.

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, with a mandatory IE having a value, including choice, reserved for future extension (spare) or a value not used in this version of the specification (e.g. a dummy value), the UE shall:

- 1> if a default value of the IE is defined:
  - 2> treat the rest of the message using the default value of the IE.
- 1> if no default value of the IE is defined:
  - 2> set the variable `PROTOCOL_ERROR_REJECT` to `TRUE`;
  - 2> set the IE "Protocol error cause" in the variable `PROTOCOL_ERROR_INFORMATION` to "Information element value not comprehended";
  - 2> perform procedure specific error handling according to clause 8.

## Reference

3GPP TS 25.331 clause 8.1.8.2, 8.1.11, 9.4.

### 8.1.1.7.3 Test purpose

To confirm that the UE responds to a PAGING TYPE 2 message which includes the IE "Paging Cause" and the IE "Paging Record Type Identifier".

To confirm that the UE responds with a RRC STATUS message after it has received an invalid PAGING TYPE 2 message.

To Page with the Paging Record Type Identifier set to "IMSI", in order to test the UEs behaviour to this situation which may occur when details of the temporary identity have been lost in the core network.

### 8.1.1.7.4 Method of test

## Initial Condition

System Simulator: 1 cell.

UE: CELL\_DCH state (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108 after executing a location registration and/or attach procedure. The UE has been registered in both CS and PS domains.

## Test Procedure

The SS transmits an invalid PAGING TYPE 2 message. UE shall respond by transmitting a RRC STATUS message on the uplink DCCH using RLC-AM mode. Finally, SS transmits a PAGING TYPE 2 message, which includes a matched Paging Record Type Identifier. In the CS domain the UE shall respond to this message by the transmission of an INITIAL DIRECT TRANSFER message. In the PS Domain the UE will locally detach and then initiate a GPRS attach procedure (as per clause 4.7.9.1.2 of TS 24.008) also involving the transmission of an INITIAL DIRECT TRANSFER message.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2		←	PAGING TYPE 2	SS pages UE from a new CN domain, see specific message contents.
3		→	RRC STATUS	The UE shall respond by reporting the protocol error to the SS.
4		←	PAGING TYPE 2	SS pages the UE with a matched identifier and with a valid "paging cause" IE from a new CN Domain.
5		→	INITIAL DIRECT TRANSFER	The UE shall respond to the paging message sent in step 4.

## Specific Message Contents

### PAGING TYPE 2 (Step 2)

SS sends a message containing a protocol error causing the UE to perform procedure specific error handling.

Use the same message type found in clause 9 of TS 34.108, with the following exceptions.

Information Element	Value/remark
Paging Cause	Set to value "Spare"
CN Domain Identity	Set to a new CN Domain
Paging Record Type Identifier	Set to "IMSI (GSM-MAP)" for UEs supporting GSM-MAP core network type or "IMSI (DS-41)" for UEs supporting ANSI-41 core network type.

### RRC STATUS (Step 3)

Use the same message type found in TS 34.108, clause 9, with the following exception.

Information Element	Value/remark
Identification of received message - Received message type - RRC transaction identifier	PAGING TYPE 2 Checked to see if the value is identical to the same IE in the PAGING TYPE 2 message.
Protocol error information - Protocol Error Cause	Information element value not comprehended

### PAGING TYPE 2 (Step 4)

Use the same message type found in TS 34.108, clause 9, with the following exception.

Information Element	Value/remark
Paging cause	Terminating Call supported by the UE in the new domain
CN domain identity	New Domain supported by the UE
Paging record type identifier	Set to "IMSI (GSM-MAP)" for UEs supporting GSM-MAP core network type or "IMSI (DS-41)" for UEs supporting ANSI-41 core network type.

### INITIAL DIRECT TRANSFER (Step 5) – for UEs supporting GSM-MAP core networks

Check to see if the same message type found in TS 34.108 clause 9 is received, with the following exceptions:

Information Element	Value/remark
CN domain identity	CS domain or PS domain as specified in the PAGING TYPE 2 message in Step 4.
Intra Domain NAS Node Selector - CHOICE version -- CHOICE CN type --- CHOICE Routing basis ---- Routing parameter	R99 GSM local (P)TMSI – if CS Domain IMSI (cause UE initiated event) - if PS Domain If the IE "CN domain identity" is equal to "CS domain": The TMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI. The first/ leftmost/ most significant bit of the bit string contains bit b23 of the TMSI/ PTMSI. If the IE "CN domain identity" is equal to "PS domain": The "Routing parameter" bit string consists of DecimalToBinary [(IMSI div 10) mod 1000]. The first/ leftmost bit of the bit string contains the most significant bit of the result.
--- Entered parameter	FALSE
NAS message	Not checked



INITIAL DIRECT TRANSFER (Step 5) – for UEs supporting ANSI-41 core networks

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
CN domain identity	CS domain or PS domain as specified in the PAGING TYPE 2 message in Step 4.
Intra Domain NAS Node Selector	
- CHOICE version	ANSI-41 : Bitstring(14), all bits set to 0
NAS message	Not checked
START	Not checked
Measured results on RACH	Not checked

8.1.1.7.5 Test requirement

After step 2 the UE shall respond to the paging message by transmitting RRC STATUS on the DCCH, stating the protocol error as " Information element value not comprehended ".

After step 4 the UE shall respond to the paging message by transmitting an INITIAL DIRECT TRANSFER message on the uplink DCCH.

8.1.1.8 Paging for Connection in connected mode (CELL\_FACH)

8.1.1.8.1 Definition

8.1.1.8.2 Conformance requirement

When the UE receives a PAGING TYPE 2 message, it shall not affect the state of any other ongoing RRC procedures, when not stated otherwise elsewhere.

The UE shall:

- 1> indicate reception of paging; and
- 1> forward the IE "Paging cause" and the IE "Paging record type identifier" to upper layers.

...

In the UE, the initial direct transfer procedure shall be initiated, when the upper layers request establishment of a signalling connection. This request also includes a request for the transfer of a NAS message.

The UE shall, in the INITIAL DIRECT TRANSFER message:

...

In CELL\_FACH state, the UE shall:

- 1> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 12 (or "System Information Block Type 11" if "System Information Block Type 12" is not being broadcast);
- 1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported.

The UE shall:

- 1> transmit the INITIAL DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3;
- 1> when the INITIAL DIRECT TRANSFER message has been submitted to lower layers for transmission:
  - 2> confirm the establishment of a signalling connection to upper layers; and
  - 2> add the signalling connection with the identity indicated by the IE "CN domain identity" in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS.

- 1> when the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC:
- 2> the procedure ends.

Reference

3GPP TS 25.331 clause 8.1.8.2, 8.1.11.

8.1.1.8.3 Test purpose

To confirm that the UE responds to a PAGING TYPE 2 message, which includes a matching value for IE "Paging Record Type Identifier".

8.1.1.8.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CELL\_FACH state (state 6-11) as specified in clause 7.4 of TS 34.108. The UE has been registered in both CS and PS domains.

Test Procedure

The SS transmits a PAGING TYPE 2 message. Then the UE shall respond by transmitting an upper layer message to answer this page.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2		←	PAGING TYPE 2	The SS transmits the message includes a matched identifier.
3		→	INITIAL DIRECT TRANSFER	The UE responds by sending an upper layer message.

Specific Message Content

PAGING TYPE 2 (Step 2)

Use the same message type found in [9] (TS 34.108) Clause 9, with the following exception.

Information Element	Value/remark
Paging cause CN domain identity Paging record type identifier	Terminating Call supported by the UE CS Set to "IMSI (GSM-MAP)" for UEs supporting GSM-MAP core network type or "IMSI (DS-41)" for UEs supporting ANSI-41 core network type.

INITIAL DIRECT TRANSFER (Step 3) – for UEs supporting GSM-MAP core networks

Only the message type IE for this message is checked.

Information Element	Value/remark
Message Type Integrity check info - Message authentication code  - RRC Message sequence number  CN domain identity Intra Domain NAS Node Selector - CHOICE version -- CHOICE CN type --- CHOICE Routing basis  ---- Routing parameter  --- Entered parameter NAS message START Measured results on RACH	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. CS domain  R99 GSM Local (P)TMSI  The TMSI/P-TMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant. The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI. The first/ leftmost/ most significant bit of the bit string contains bit b23 of the TMSI/ PTMSI. FALSE Not checked Not checked Not checked

INITIAL DIRECT TRANSFER (Step 3) – for UEs supporting ANSI-41 core networks

Information Element	Value/remark
Message Type Integrity check info - Message authentication code  - RRC Message sequence number  CN domain identity Intra Domain NAS Node Selector - CHOICE version NAS message START Measured results on RACH	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. CS domain  ANSI-41 : Bitstring(14), all bits set to 0 Not checked Not checked Not checked

8.1.1.8.5 Test requirement

After step 2 the UE shall respond to the PAGING TYPE 2 message by transmitting an INITIAL DIRECT TRANSFER message on the uplink DCCH.

8.1.2 RRC Connection Establishment

8.1.2.1 RRC Connection Establishment in CELL\_DCH state: Success

8.1.2.1.1 Definition

8.1.2.1.2 Conformance requirement

The UE shall initiate the procedure when upper layers in the UE requests the establishment of a signalling connection and the UE is in idle mode (no RRC connection exists).

Upon initiation of the procedure, the UE shall:

...

- 1> set the contents of the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;
- 1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;
- 1> perform the mapping of the Access Class to an Access Service Class as specified in TS 25.331 subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
- 1> submit the RRC CONNECTION REQUEST message for transmission on the uplink CCCH;
- 1> set counter V300 to 1; and
- 1> start timer T300 when the MAC layer indicates success or failure to transmit the message;
- 1> select a Secondary CCPCH according to TS 25.304;
- 1> start receiving all FACH transport channels mapped on the selected Secondary CCPCH.

....

The UE shall, in the transmitted RRC CONNECTION REQUEST message:

- 1> set the IE "Establishment cause" to the value of the variable ESTABLISHMENT\_CAUSE;
- 1> set the IE "Initial UE identity" to the value of the variable INITIAL\_UE\_IDENTITY;

...

The UE shall not include the IE "UE Specific Behaviour Information 1 idle".

....

The UE shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION SETUP message with the value of the variable INITIAL\_UE\_IDENTITY.

If the values are different, the UE shall:

- 1> ignore the rest of the message.

If the values are identical, the UE shall:

- 1> stop timer T300, and act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified otherwise in the following:
  - 2> if the UE, according to TS 25.331 subclause 8.6.3.3, will be in the CELL\_FACH state at the conclusion of this procedure:
    - ...

- 1> if the UE, according to TS 25.331 subclause 8.6.3.3, will be in the CELL\_DCH state at the conclusion of this procedure:

- 2> perform the physical layer synchronization procedure A as specified in TS 25.214;
- 2> enter UTRA RRC connected mode, in a state according to TS 25.331 subclause 8.6.3.3;

- 1> submit an RRC CONNECTION SETUP COMPLETE message to the lower layers on the uplink DCCH after successful state transition per TS 25.331 subclause 8.6.3.3, with the contents set as specified below:

- 2> set the IE "RRC transaction identifier" to:
  - 3> the value of "RRC transaction identifier" in the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 3> clear that entry.

...

- 2> retrieve its UTRA UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and then
- 2> include this in IE "UE radio access capability" and IE "UE radio access capability extension", provided this IE is included in variable UE\_CAPABILITY\_REQUESTED;

- 2> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and then
- 2> include this in IE "UE system specific capability".

When the RRC CONNECTION SETUP COMPLETE message has been submitted to lower layers for transmission the UE shall:

- 1> consider the procedure to be successful;

And the procedure ends.

#### Reference

3GPP TS 25.331 clause 8.1.3.2, 8.1.3.3 and 8.1.3.6

#### 8.1.2.1.3 Test purpose

1. To confirm that the UE leaves the Idle Mode and correctly establishes signalling radio bearers on the DCCH.
2. To confirm that the UE indicates the requested UE radio access capabilities and UE system specific capabilities (may be used by UTRAN e.g. to configure inter RAT- measurements).
3. To confirm that the UE does not include the IE "UE Specific Behaviour Information 1 idle" in the RRC CONNECTION REQUEST message.

#### 8.1.2.1.4 Method of test

##### Initial Condition

System Simulator: 1 cell.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

##### Test Procedure

The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by attempting to make an outgoing call. After SS receives this message, it assigns the necessary radio resources and U-RNTI to be used by the UE. SS then transmits an RRC CONNECTION SETUP message containing an IE "Initial UE Identity" that does not match the IE "Initial UE Identity" in the most recent RRC CONNECTION REQUEST message sent by the UE. UE receives the RRC CONNECTION SETUP message before timer T300 expires but discards it due to a IE "Initial UE Identity" mismatch. UE shall wait for timer T300 to time out before re-transmitting a RRC CONNECTION REQUEST message to the SS. SS again assigns the necessary radio resources and U-RNTI. SS then transmits a RRC CONNECTION SETUP message containing an IE "Initial UE Identity" that matches the IE "Initial UE Identity" in the most recent RRC CONNECTION REQUEST sent by the UE. SS then waits for the UE to transmit an RRC CONNECTION SETUP COMPLETE message on the DCCH. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		→	RRC CONNECTION REQUEST	By outgoing call operation. See specific message contents.
2		←	RRC CONNECTION SETUP	This message is not addressed to the UE. See specific message contents.
3		→	RRC CONNECTION REQUEST	UE shall re-transmit the request message again after a time out of T300 from step 1.
3a				SS checks IE "UE Specific Behaviour Information 1 idle" is not included in received RRC CONNECTION REQUEST message.
4		←	RRC CONNECTION SETUP	See specific message contents.
5				The UE configures the layer 2 and layer 1.
6		→	RRC CONNECTION SETUP COMPLETE	See specific message contents.
7		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Content

System Information Block type 11 (FDD)

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Intra-frequency reporting quantity for RACH Reporting	
- SFN-SFN observed time difference reporting indicator	No report
- CHOICE <i>mode</i>	
- FDD	
- Reporting quantity	CPICH Ec/N0
- Maximum number of reported cells on RACH	current cell

System Information Block type 11 (TDD)

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Intra-frequency reporting quantity for RACH Reporting	
- SFN-SFN observed time difference reporting indicator	No report
- CHOICE <i>mode</i>	TDD
- Reporting quantity list	
- Reporting quantity	P-CCPCH RSCP
- Maximum number of reported cells on RACH	current cell

RRC CONNECTION REQUEST (Step 1) (FDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
UE Specific Behaviour Information 1 idle	Check if this IE is absent.
Measured results on RACH	Check to see if set in accordance with the IE "Intra-frequency reporting quantity for RACH Reporting" included in SYSTEM INFORMATION BLOCK Type 11
- Measurement result for current cell	
- CHOICE mode	
- FDD	
- CHOICE measurement quantity	
- CPICH Ec/N0	The actual reported value is not checked

#### RRC CONNECTION REQUEST (Step 1) (TDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Measured results on RACH	Check to see if set in accordance with the IE "Intra-frequency reporting quantity for RACH Reporting" included in SYSTEM INFORMATION BLOCK Type 11
- Measurement result for current cell	
- CHOICE mode	TDD
- CHOICE measurement quantity	
- P-CCPCH RSCP	The actual reported value is not checked

#### RRC CONNECTION SETUP (Step 2)

Use the same message type found in clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
Initial UE Identity	Set to the same type as in the RRC CONNECTION REQUEST message but with a different value

#### RRC CONNECTION SETUP (Step 4)

Use the default message with the same message type and covering the scenario used in this test (Transition to CELL\_DCH) specified in clause 9 of TS 34.108.

#### RRC CONNECTION SETUP COMPLETE (Step 6)

Use the default message with the same message type specified in clause 9 of TS 34.108 with the following exception.

Information Element	Value/remark
UE Radio Access Capability	Checked to see if compatible with the stated capability in PIXIT/PICS statements.
UE radio access capability extension	Checked to see if compatible with the stated capability in PIXIT/PICS statements.
UE system specific Capability	Checked to see if compatible with the stated capability in PIXIT/PICS statements.

#### 8.1.2.1.5 Test requirement

After step 2 the UE shall re-transmit the RRC CONNECTION REQUEST message again in order to continue the RRC connection establishment procedure.

After step 3 the SS shall check IE "UE Specific Behaviour Information 1 idle" isn't included in received RRC CONNECTION REQUEST message.

After step 6 the UE shall establish an RRC connection and continue the procedure of the outgoing call on the DCCH.

## 8.1.2.2 RRC Connection Establishment: Success after T300 timeout

### 8.1.2.2.1 Definition

### 8.1.2.2.2 Conformance requirement

If the UE has not yet received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL\_UE\_IDENTITY; and

if expiry of timer T300 occurs:

the UE shall:

- 1> check the value of V300; and
  - 2> if V300 is equal to or smaller than N300:
    - 3> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;
    - 3> submit a new RRC CONNECTION REQUEST message to lower layers for transmission on the uplink CCCH;
    - 3> increment counter V300;
    - 3> restart timer T300 when the MAC layer indicates success or failure to transmit the message.
  - 2> if V300 is greater than N300:
    - ...

### Reference

3GPP TS 25.331 clause 8.1.3.5.

### 8.1.2.2.3 Test purpose

To confirm that the UE retries to establish the RRC connection until V300 is greater than N300 after the expiry of timer T300 when the SS transmits no response for an RRC CONNECTION REQUEST message.

### 8.1.2.2.4 Method of test

#### Initial Condition

System Simulator: 1 cell. SCCPCH configuration as specified in 6.1.1 of TS 34.108.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

NOTE: This test requires that N300 is bigger than 0, which is the case (see default contents of SIB 1, specified in TS 34.108). Expiry of timer T300 is verified only for N300 values exceeding 1.

#### Test Procedure

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 5 message is modified and this modification is notified to the UE. An internal counter K in SS is initialized to a value = 0. Following this, the UE shall transmit an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by use of selected PRACH from the available PRACH No.1 and PRACH No.2, after the operator attempts to make an outgoing call. SS ignores this message, increments K every time such a message is received and waits for T300 timer to expire. This cycle is repeated until K reaches N300. When K is equal to N300, the SS transmits an RRC CONNECTION SETUP message containing an unexpected critical message extension as specified in step 6 to the UE. The UE shall send another RRC CONNECTION REQUEST message on the uplink CCCH. SS replies with a valid RRC CONNECTION SETUP message. The UE shall then acknowledge the establishment of RRC connection by sending the RRC CONNECTION SETUP COMPLETE message on uplink DCCH.



Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PAGING TYPE 1	SS transmits the paging message which comprises IE "BCCH Modification Information", with the "Value Tag" different from the "MIB Value Tag" of the current Master Information Block. Also the modification time is set to 2048 radio frames from the current SFN. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH. See specific message contents.
1a		←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 5	SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting. At the same time, SS starts to transmit the affected SIB TYPE 5 messages. See specific message contents.
2				SS initializes counter K to 0. Operator is asked to make an outgoing call and SS starts to wait for RRC CONNECTION REQUEST on uplink CCCH.
3		→	RRC CONNECTION REQUEST	See the clause 9 in TS 34.108 on default message content
4				SS increments K.
5				SS checks to see if K is equal to N300. If so, goes to step 6. Else, continues to execute step 3.
6		←	RRC CONNECTION SETUP	Use an invalid message in ASN.1. See specific message contents for this message.
7		→	RRC CONNECTION REQUEST	See specific message contents.
8		←	RRC CONNECTION SETUP	This is a legal message. See the clause 9 in TS 34.108 on default message content for RRC.
9				The UE configures the layer 1 and layer 2.
10		→	RRC CONNECTION SETUP COMPLETE	See clause 9 in TS 34.108 on default message content

## Specific Message Contents

### PAGING TYPE 1 (Step 1)

Information Element	Value/remark
Message Type	
Paging record list	Not present
BCCH modification info	
- MIB Value Tag	2
- BCCH Modification time	Set to (current SFN + 2048)

### SYSTEM INFORMATION TYPE 5 (Step 1a) - (FDD)

Use the default parameter values for the system information block with the same type specified in clause 6.1.1 of TS 34.108, with the following exceptions:

- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	FDD
- CHOICE mode	'0000 0000 1111 1111'B
- Available Signature	64
- Available SF	0
- Preamble scrambling code number	1.00
- Puncturing Limit	'1111 1111 1111'B
- Available Sub Channel number	15
- Transport Channel Identity	
- RACH TFS	Common transport channels
- CHOICE Transport channel type	
- Dynamic Transport format information	168
- RLC size	1
- Number of TB and TTI List	FDD
- Number of Transport blocks	Configured
- CHOICE Mode	360
- CHOICE Logical Channel List	
- RLC size	1
- Number of TB and TTI List	FDD
- Number of Transport blocks	Configured
- CHOICE Mode	
- CHOICE Logical Channel List	
- Semi-static Transport Format information	20 ms
- Transmission time interval	Convolutional
- Type of channel coding	1/2
- Coding Rate	150
- Rate matching attribute	16
- CRC size	
- RACH TFCS	
- Normal	
- TFCI Field 1 information	Complete reconfiguration
- CHOICE TFCS representation	
- TFCS addition information	2 bit
- CHOICE CTFC Size	0
- CTFC information	Computed Gain Factor
- Power offset information	0
- CHOICE Gain Factors	FDD
- Reference TFC ID	0dB
- CHOICE Mode	1
- Power offset Pp-m	
- CTFC information	Signalled Gain Factor
- Power offset information	11
- CHOICE Gain Factors	15
- Gain factor $\beta_c$	0
- Gain factor $\beta_d$	FDD
- Reference TFC ID	0dB
- CHOICE Mode	
- Power offset Pp-m	
- PRACH partitioning	Not Present
- Access Service Class	
- ASC Setting	FDD
- ASC Setting	0 (ASC#1)
- CHOICE mode	7 (ASC#1)
- Available signature Start Index	'1111'B
- Available signature End Index	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- Assigned Sub-Channel Number	Not Present
- ASC Setting	FDD
- ASC Setting	0 (ASC#3)
- CHOICE mode	7 (ASC#3)
- Available signature Start Index	'1111'B
- Available signature End Index	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- Assigned Sub-Channel Number	Not Present
- ASC Setting	
- ASC Setting	

- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#5)
- Available signature End Index	7 (ASC#5)
- Assigned Sub-Channel Number	'1111'B
	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
	Not Present
- ASC Setting	FDD
- ASC Setting	0 (ASC#7)
- CHOICE mode	7 (ASC#7)
- Available signature Start Index	'1111'B
- Available signature End Index	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- Assigned Sub-Channel Number	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
CHOICE mode	FDD
- Primary CPICH DL TX power	31
- Constant value	-10
- PRACH power offset	
- Power Ramp Step	3dB
- Preamble Retrans Max	4
- RACH transmission parameters	
- Mmax	2
- NB01min	3 slot
- NB01max	10 slot
- AICH info	
- Channelisation code	3
- STTD indicator	FALSE
- AICH transmission timing	0
- PRACH info (PRACH No.2)	
- CHOICE mode	FDD
- Available Signature	'0000 0000 1111 1111'B
- Available SF	64
- Preamble scrambling code number	1
- Puncturing Limit	1.00
- Available Sub Channel number	'1111 1111 1111'B
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- RLC size	360
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150

- CRC size	16
- RACH TFCS	
- Normal	
- TFCI Field 1 information	Complete reconfiguration
- CHOICE TFCS representation	
- TFCS addition information	2 bit
- CHOICE CTFC Size	0
- CTFC information	
- Power offset information	Computed Gain Factor
- CHOICE Gain Factors	0
- Reference TFC ID	FDD
- CHOICE Mode	0 dB
- Power offset Pp-m	1
- CTFC information	0
- Reference TFC ID	
- Power offset information	Signalled Gain Factor
- CHOICE Gain Factors	11
- Gain factor $\beta_c$	15
- Gain factor $\beta_d$	0
- Reference TFC ID	FDD
- CHOICE Mode	0dB
- Power offset Pp-m	
- PRACH partitioning	
- Access Service Class	Not Present
- ASC Setting	
- ASC Setting	FDD
- CHOICE mode	0 (ASC#1)
- Available signature Start Index	7 (ASC#1)
- Available signature End Index	'1111'B
- Assigned Sub-Channel Number	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
	Not Present
- ASC Setting	
- ASC Setting	FDD
- CHOICE mode	0 (ASC#3)
- Available signature Start Index	7 (ASC#3)
- Available signature End Index	'1111'B
- Assigned Sub-Channel Number	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
	Not Present
- ASC Setting	
- ASC Setting	FDD
- CHOICE mode	0 (ASC#5)
- Available signature Start Index	7 (ASC#5)
- Available signature End Index	'1111'B
- Assigned Sub-Channel Number	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
	Not Present
- ASC Setting	
- ASC Setting	FDD
- CHOICE mode	0 (ASC#7)
- Available signature Start Index	7 (ASC#7)
- Available signature End Index	'1111'B
- Assigned Sub-Channel Number	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)

- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
CHOICE mode	FDD
- Primary CPICH DL TX power	31
- Constant value	-10
- PRACH power offset	
- Power Ramp Step	3dB
- Preamble Retrans Max	4
- RACH transmission parameters	
- Mmax	2
- NB01min	3 slot
- NB01max	10 slot
- AICH info	
- Channelisation code	4
- STTD indicator	FALSE
- AICH transmission timing	0

SYSTEM INFORMATION TYPE 5 (Step 1a) – 3.84 Mcps TDD

- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Timeslot Number	14
- PRACH Channelisation Code	
- CHOICE SF	8
- Channelisation Code List	
- Channelisation Code	8/1
- Channelisation Code	8/2
- Channelisation Code	8/3
- Channelisation Code	8/4
- PRACH Midamble	Direct
-PNBSCH allocation	Not Present
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD

- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD
- PRACH info (PRACH No.2)	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Timeslot Number	14
- PRACH Channelisation Code	
- CHOICE SF	8
- Channelisation Code List	
- Channelisation Code	8/5 where i denotes an unassigned code
- Channelisation Code	8/6 where i denotes an unassigned code
- Channelisation Code	8/7 where i denotes an unassigned code
- Channelisation Code	8/8 where i denotes an unassigned code
- PRACH Midamble	Direct
-PNBSCH allocation	Not Present
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD



- Available SYNC_UL codes indices	'00001111'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD

SYSTEM INFORMATION TYPE 5 (Step 1a) – 1.28 Mcps TDD

- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- SYNC_UL info	
- SYNC_UL codes bitmap	'11110000'B
- PRX <sub>UpPCHdes</sub>	10
- Power Ramping Step	3
- Max SYNC_UL Transmissions	8
- Mmax	32
- PRACH Definition	
- Timeslot Number	
- CHOICE TDD option	1.28 Mcps TDD
- Timeslot number	1
- PRACH Channelisation Code	
- Channelisation Code List	
- Channelisation Code	8/1
- Midamble shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	8
- Midamble Shift	Not Present
- FPACH info	
- Timeslot number	6
- Channelisation code	16/16
- Midamble Shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	16
- Midamble Shift	Not Present
- WT	4
- PNBSCH allocation	Not Present
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD

- Available SYNC_UL codes indices	'11110000'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD
- PRACH info (PRACH No.2)	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- SYNC_UL info	
- SYNC_UL codes bitmap	'11110000'B
- PRX <sub>UpPCHdes</sub>	10
- Power Ramping Step	1
- Max SYNC_UL Transmissions	8
- Mmax	32
- PRACH Definition	
- Timeslot Number	
- CHOICE TDD option	1.28 Mcps TDD
- Timeslot number	1
- PRACH Channelisation Code	
- Channelisation Code List	
- Channelisation Code	8/2
- Midamble shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	8
- Midamble Shift	Not Present
- FPACH info	
- Timeslot number	An available down-link timeslot

- Channelisation code	16/15
- Midamble Shift and burst type	1.28 Mcps TDD
- CHOICE TDD option	Default
- Midamble Allocation Mode	16
- Midamble Configuration	Not Present
- Midamble Shift	4
- WT	Not Present
- PNBSCH allocation	
- RACH TFS	Common transport channels
- CHOICE Transport channel type	
- Dynamic Transport format information	168
- RLC size	
- Number of TB and TTI List	Not Present
- Transport Time Interval	1
- Number of Transport Blocks	ALL
- CHOICE Logical Channel List	
- Semi-static Transport Format information	10 ms
- Transmission time interval	Convolutional
- Type of channel coding	1/2
- Coding Rate	150
- Rate matching attribute	16
- CRC size	Not Present
- RACH TFCS	
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#6)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)

- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD

### RRC CONNECTION SETUP (Step 6)

SS sends a message containing a critical extension not defined for the protocol release supported by the UE, as indicated in the IE "Access stratum release indicator":

Information Element	Value/remark
RRC transaction identifier	Arbitrarily selects an integer between 0 and 3
Critical extensions	'01'H

### RRC CONNECTION REQUEST (Step 7)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Protocol Error Indicator	Check to see if set to TRUE

#### 8.1.2.2.5 Test requirement

After step 2 the UE shall select either PRACH No.1 or PRACH No.2 and transmit an RRC CONNECTION REQUEST message.

After step 6 the UE shall re-send another RRC CONNECTION REQUEST message.

After step 9 the UE shall transmit an RRC CONNECTION SETUP COMPLETE message and establish an RRC connection on the DCCH logical channel.

#### 8.1.2.3 RRC Connection Establishment: Failure (V300 is greater than N300)

##### 8.1.2.3.1 Definition

##### 8.1.2.3.2 Conformance requirement

The UE shall initiate the procedure when upper layers in the UE requests the establishment of a signalling connection and the UE is in idle mode (no RRC connection exists).

Upon initiation of the procedure, the UE shall:

- 1> set the IE "Initial UE identity" in the variable INITIAL\_UE\_IDENTITY according to TS 25.331 subclause 8.5.1;
- 1> submit the RRC CONNECTION REQUEST message for transmission on the uplink CCCH;
- 1> set counter V300 to 1; and
- 1> start timer T300 when the MAC layer indicates success or failure to transmit the message;
- 1> select a Secondary CCPCH according to TS 25.304;
- 1> start receiving all FACH transport channels mapped on the selected Secondary CCPCH.

The UE shall, in the transmitted RRC CONNECTION REQUEST message:

- 1> set the IE "Initial UE identity" to the value of the variable INITIAL\_UE\_IDENTITY;

...

1> if the UE has not yet received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL\_UE\_IDENTITY; and

1> if cell re-selection or expiry of timer T300 occurs:

the UE shall:

1> check the value of V300; and

2> if V300 is equal to or smaller than N300:

...

3> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;

...

3> submit a new RRC CONNECTION REQUEST message to lower layers for transmission on the uplink CCCH;

3> increment counter V300;

3> restart timer T300 when the MAC layer indicates success or failure to transmit the message.

...

2> if V300 is greater than N300:

3> enter idle mode.

3> consider the procedure to be unsuccessful;

3> Other actions the UE shall perform when entering idle mode from connected mode are specified in TS 25.331 subclause 8.5.2;

3> the procedure ends.

## Reference

3GPP TS 25.331 clause 8.1.3.

8.1.2.3.3 Test purpose

To confirm that the UE stops retrying to establish the RRC connection if V300 is greater than N300 and goes back to idle mode.

8.1.2.3.4 Method of test

## Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

## Test Procedure

Before the test starts, SS initializes an internal counter K to 0. The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by an outgoing call operation. SS shall not respond to any RRC CONNECTION REQUEST message, instead the counter K is increased by 1 every time such a message is received. To arrive at the verdict, the SS checks that a total of (N300+1) such messages are received. SS calls for generic procedure C.1 to check that UE is in Idle Mode state.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS initializes counter K to 0 and then prompts the operator to make an outgoing call.
2		→	RRC CONNECTION REQUEST	
3				SS increments K by 1.
4				If K is greater than N300, goes to step 5 else proceed to step 2.
5				SS monitor the uplink CCCH for a time period enough for UE to goes back to idle state. SS waits for 5s.
6		←→	CALL C.1	If the test result of C.1 indicates that UE is in Idle Mode state, the test passes, otherwise it fails.

## Specific Message Contents

None

### 8.1.2.3.5 Test requirement

After step 5, counter K shall be equal to (N300+1) and there shall be no uplink transmission in the monitoring period specified in step 5.

### 8.1.2.4 RRC Connection Establishment: Reject ("wait time" is not equal to 0)

#### 8.1.2.4.1 Definition

#### 8.1.2.4.2 Conformance requirement

When the UE receives an RRC CONNECTION REJECT message on the downlink CCCH, it shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION REJECT message with the value of the variable INITIAL\_UE\_IDENTITY:

If the values are different, the UE shall ignore the rest of the message;

If the values are identical, the UE shall stop timer T300 and:

1> if the IE "wait time" <> '0'; and

1> if the IE "frequency info" is present and:

2> if V300 is equal to or smaller than N300:

3> initiate cell selection on the designated UTRA carrier;

3> after having selected and camped on a cell:

4> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

4> set the contents of the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;

4> perform the mapping of the Access Class to an Access Service Class as specified in TS 25.331 subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;

4> transmit an RRC CONNECTION REQUEST message on the uplink CCCH;

4> reset counter V300;

4> start timer T300 when the MAC layer indicates success or failure in transmitting the message;

4> disable cell reselection to original carrier until the time stated in the IE "wait time" has elapsed;

- 3> if a cell selection on the designated carrier fails:
  - 4> wait for the time stated in the IE "wait time";
  - 4> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;
  - 4> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;
  - 4> perform the mapping of the Access Class to an Access Service Class as specified in TS 25.331 subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
  - 4> then submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH of the original serving cell;
  - 4> increment counter V300;
  - 4> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
- 2> if V300 is greater than N300:
  - 3> enter idle mode;
  - 3> perform the actions specified in TS 25.331 subclause 8.5.2 when entering idle mode from connected mode;
  - 3> consider the RRC establishment procedure to be unsuccessful;
  - 3> the procedure ends.
- ...
- 1> If the IEs "frequency info" not present.....:
  - 2> if V300 is equal to or smaller than N300:
    - 3> wait at least the time stated in the IE "wait time";
    - 3> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.2;
    - 3> perform the mapping of the Access Class to an Access Service Class as specified in TS 25.331 subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
    - 3> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
    - 3> increment counter V300;
    - 3> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
  - 2> if V300 is greater than N300:
    - 3> enter idle mode;
    - 3> perform the actions specified in TS 25.331 subclause 8.5.2 when entering idle mode from connected mode;
    - 3> consider the RRC establishment procedure to be unsuccessful;
    - 3> the procedure ends.

## Reference

3GPP TS 25.331 clause 8.1.3.9.



#### 8.1.2.4.3 Test purpose

To confirm that the UE retries to establish the RRC connection after the "wait time" elapses, if the UE receives an RRC CONNECTION REJECT message which includes the IE "wait time" not set to 0. To confirm that the UE performs a cell reselection when receiving an RRC CONNECTION REJECT message, containing relevant frequency information of the target cell to be re-selected.

#### 8.1.2.4.4 Method of test

##### Initial Condition

System Simulator: 2 cells – both cell 1 and cell 4 are active and suitable for camping, but cell 1 is transmitted using a larger power. Cell 1 and cell 4 are being transmitted from different 2 UARFCNs. The transmission power of cell 4 is 15 dB smaller than cell 1.

**Table 8.1.2.4**

Parameter	Unit	Cell 1	Cell 4
UTRA RF Channel Number		Ch. 1	Ch. 2
CPICH Ec (FDD)	dBm/3.84 MHz	-60	-75
P-CCPCH (TDD)	dBm	-60	-75

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

##### Test Procedure

The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by an outgoing call operation in cell 1. SS rejects the first request by transmitting an RRC CONNECTION REJECT message which indicates a non-zero wait time. In this message, frequency information for cell 4 is available. SS then waits for RRC CONNECTION REQUEST message on the uplink CCCH of cell 4. SS will also monitor the uplink of cell 1 simultaneously to ensure that all transmission activities from cell 1 have ceased. When the UE has successfully camp onto cell 4, it shall send an RRC CONNECTION REQUEST with the same establishment cause as its previous attempt in cell 1. SS responds with an RRC CONNECTION REJECT message, indicating a non-zero "wait time" and omitting the IE "Redirection Info". The UE shall observe the wait time period indicated. After the wait time has elapsed, the UE shall re-transmit RRC CONNECTION REQUEST again. Finally, SS transmits an RRC CONNECTION SETUP message to establish an RRC connection with the UE, and the UE replies with an RRC CONNECTION SETUP COMPLETE message and enters CELL\_DCH state.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		→	RRC CONNECTION REQUEST	SS prompts the operator to make an outgoing call in cell 1.
2		←	RRC CONNECTION REJECT	This message shall includes the IE "wait time" set to 15 seconds and IE "frequency info" set to the UARFCN of cell 4. Note: this wait time would apply after failure of the inter frequency cell re- selection, which is not verified in this test case
3				SS waits for a period of time sufficient for UE to reselect to cell 4. At the same time, it monitors the uplink of cell 1 to make sure that all transmissions have ceased.
4		→	RRC CONNECTION REQUEST	UE shall attempt to re-start an RRC connection establishment procedure in cell 4. The establishment cause shall remain unchanged.
5		←	RRC CONNECTION REJECT	This message shall include the IE "wait time" set to 15 seconds, but with IE "Redirection Info" absent.
6		→	RRC CONNECTION REQUEST	SS waits until the duration specified in IE "wait time" has elapsed and then listens to the uplink CCCH for a second RRC CONNECTION REQUEST message.
7		←	RRC CONNECTION SETUP	SS sends the message to UE to setup an RRC connection with the UE.
8				The UE shall configure the layer 2 and layer 1 in order to access the uplink and downlink DCCH assigned.
9		→	RRC CONNECTION SETUP COMPLETE	

Specific Message Contents

RRC CONNECTION REQUEST (Step 1, step 4 and step 6)

Use the same message type found in clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
Initial UE Identity	Same as the IMSI stored in the TEST USIM card, or the registered TMSI or P-TMSI
Establishment Cause	Must be "Originating Call"

RRC CONNECTION REJECT (Step 2) - FDD

Use the same message type found in clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
Wait time	15 seconds
Redirection Info	
- Frequency Info	
- CHOICE mode	FDD
- UARFCN uplink (Nu)	Not present
- UARFCN downlink (Nd)	Set to the UARFCN for uplink carrier of cell 4

## RRC CONNECTION REJECT (Step 2) – TDD

Information Element	Value/remark
Wait time	15 seconds
Redirection Info	
Frequency Info	
CHOICE Mode	TDD
UARFCN (Nt)	Set to a different UARFCN from the carrier of cell 1

## RRC CONNECTION REJECT (Step 5)

Use the same message type found in clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
Wait time	15 seconds

### 8.1.2.4.5 Test requirement

After step 3 the UE shall have successfully re-selected to cell 4. UE shall trigger the start of RRC connection establishment by transmitting RRC CONNECTION REQUEST. The establishment cause shall be originating call.

After step 5 the UE shall observe the period specified in IE "wait time" of the RRC CONNECTION REJECT message and not transmit an RRC CONNECTION REQUEST message in this period.

After step 7 the UE shall transmit an RRC CONNECTION SETUP COMPLETE message to SS on uplink DCCH and then establish an RRC connection.

### 8.1.2.5 RRC Connection Establishment: Reject ("wait time" is not equal to 0 and V300 is greater than N300)

#### 8.1.2.5.1 Definition

#### 8.1.2.5.2 Conformance requirement

When the UE receives an RRC CONNECTION REJECT message on the downlink CCCH, it shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION REJECT message with the value of the variable INITIAL\_UE\_IDENTITY:

If the values are different, the UE shall ignore the rest of the message;

If the values are identical, the UE shall stop timer T300 and:

1> if the IE "wait time"  $\neq$  '0'; and

1> if the IE "frequency info" is present and:

2> if V300 is equal to or smaller than N300:

3> initiate cell selection on the designated UTRA carrier;

3> after having selected and camped on a cell:

4> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

4> set the contents of the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;

4> perform the mapping of the Access Class to an Access Service Class as specified in TS 25.331 subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;

4> transmit an RRC CONNECTION REQUEST message on the uplink CCCH;

4> reset counter V300;

4> start timer T300 when the MAC layer indicates success or failure in transmitting the message;

4> disable cell reselection to original carrier until the time stated in the IE "wait time" has elapsed;

- 3> if a cell selection on the designated carrier fails:
  - 4> wait for the time stated in the IE "wait time";
  - 4> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;
  - 4> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;
  - 4> perform the mapping of the Access Class to an Access Service Class as specified in TS 25.331 subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
  - 4> then submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH of the original serving cell;
  - 4> increment counter V300;
  - 4> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
- 2> if V300 is greater than N300:
  - 3> enter idle mode;
  - 3> perform the actions specified in TS 25.331 subclause 8.5.2 when entering idle mode from connected mode;
  - 3> consider the RRC establishment procedure to be unsuccessful;
  - 3> the procedure ends.
- ...
- 1> If the IEs "frequency info" not present.....:
  - 2> if V300 is equal to or smaller than N300:
    - 3> wait at least the time stated in the IE "wait time";
    - 3> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.2;
    - 3> perform the mapping of the Access Class to an Access Service Class as specified in TS 25.331 subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
    - 3> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
    - 3> increment counter V300;
    - 3> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
  - 2> if V300 is greater than N300:
    - 3> enter idle mode;
    - 3> perform the actions specified in TS 25.331 subclause 8.5.2 when entering idle mode from connected mode;
    - 3> consider the RRC establishment procedure to be unsuccessful;
    - 3> the procedure ends.

## Reference

3GPP TS 25.331 clause 8.1.3.9.

### 8.1.2.5.3 Test purpose

To confirm that the UE retries to establish the RRC connection after the "wait time" elapses if the UE receives an RRC CONNECTION REJECT message which specifies a non-zero IE "wait time".  
To confirm that the UE stops retrying to establish the RRC connection if V300 is greater than N300 and goes back to idle mode.

### 8.1.2.5.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE

#### Test Procedure

Before the test starts, SS initializes an internal counter K to 0. The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH, triggered by an outgoing data call operation. SS rejects all requests by transmitting an RRC CONNECTION REJECT message which indicates a non-zero wait time and the counter K is increased by 1 every time such a message is received. To arrive at the verdict, the SS checks that a total of (N300+1) such messages are received and the UE enters idle state. SS calls for generic procedure C.1 to check that UE is in Idle Mode state.

#### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS initializes counter K to 0 and then prompts the operator to make an outgoing data call.
2		→	RRC CONNECTION REQUEST	Shall be sent on CCCH and contain the correct establishment cause.
3		←	RRC CONNECTION REJECT	This message includes the IE "wait time" set to 15 seconds.
4				SS increments K by 1.
5				If K is greater than N300, goes to step 6. Else SS waits for 15 sec before proceeding to step 2.
6				SS monitor the uplink CCCH for a time period enough for UE to goes back to idle state. SS waits for 5s.
7		↔	CALL C.1	If the test result of C.1 indicates that UE is in Idle Mode state, the test passes, otherwise it fails.

#### Specific Message Contents

##### RRC CONNECTION REQUEST (Step 2)

Use the same message type found in clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
Initial UE Identity	Same as the IMSI stored in the TEST USIM card, or the registered TMSI or P-TMSI
Establishment Cause	Must be "Originating Call"

##### RRC CONNECTION REJECT (Step 3)

Use the same message type found in [TS 34.108 clause 9](#) ~~Annex A~~, with the following exception.

Information Element	Value/remark
Wait time	15 seconds

#### 8.1.2.5.5 Test requirement

After step 6, counter K shall be equals to (N300+1) and there shall be no uplink transmission in the monitoring period specified in step 6.

#### 8.1.2.6 RRC Connection Establishment: Reject ("wait time" is set to 0)

##### 8.1.2.6.1 Definition

##### 8.1.2.6.2 Conformance requirement

When the UE receives an RRC CONNECTION REJECT message on the downlink CCCH, it shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION REJECT message with the value of the variable INITIAL\_UE\_IDENTITY:

If the values are different, the UE shall ignore the rest of the message;

If the UE has not yet received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL\_UE\_IDENTITY; and

if expiry of timer T300 occurs:

the UE shall:

1> check the value of V300; and

2> if V300 is equal to or smaller than N300:

3> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;

3> submit a new RRC CONNECTION REQUEST message to lower layers for transmission on the uplink CCCH;

3> increment counter V300;

3> restart timer T300 when the MAC layer indicates success or failure to transmit the message.

2> if V300 is greater than N300:

...

#### Reference

3GPP TS 25.331 clause 8.1.3.9.

##### 8.1.2.6.3 Test purpose

To confirm that the UE goes back to idle mode, if the SS transmits an RRC CONNECTION REJECT message which includes IE "wait time" set to 0. To confirm that the UE ignores an RRC CONNECTION REJECT message not addressed to it. To confirm that the UE is capable of handling an erroneous RRC CONNECTION REJECT message correctly.

##### 8.1.2.6.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

## Test Procedure

The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by making an outgoing call. After the SS receives this message, it transmits an RRC CONNECTION REJECT message which is not addressed to the UE. The UE shall disregard this message and proceed to re-transmit RRC CONNECTION REQUEST message upon T300 timer expiry. SS answers the second RRC CONNECTION REQUEST message by transmitting an invalid RRC CONNECTION REJECT message. The UE shall continue to send the third RRC CONNECTION REQUEST message upon expiry of T300 timer. Next, the SS sends a legal RRC CONNECTION REJECT message which includes IE "wait time" which is set to '0'. To confirm that the UE goes back to idle mode immediately after receiving the reject message, SS shall monitor the uplink CCCH for the next 60 seconds and verify that there is no further transmission in the uplink direction.

### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		→	RRC CONNECTION REQUEST	Test operator is prompted to make an out-going call,
2		←	RRC CONNECTION REJECT	IE "Initial UE identity" contains an identity different from any of the UE identities available.
3		→	RRC CONNECTION REQUEST	UE shall send this message after T300 expires.
4		←	RRC CONNECTION REJECT	
5		→	RRC CONNECTION REQUEST	UE shall send this message after T300 expires.
6		←	RRC CONNECTION REJECT	IE "wait time" is set to 0.
7				The UE goes back to idle mode.

### Specific Message Contents

#### RRC CONNECTION REQUEST (Step 1, 3 and 5)

Information Element	Value/remark	
Message Type	Same as the IMSI stored in the TEST USIM card, or the registered TMSI or P-TMSI	
Initial UE Identity		
Establishment Cause		Checked to see if set to one of the supported originating call types
Protocol Error Indicator		Checked to see if set to "FALSE"
Measured Results on RACH		Checked to see if it is absent

#### RRC CONNECTION REJECT (Step 2)

Use the same message type found in [Annex A clause 9 of TS 34.108](#), with the following exception.

Information Element	Value/remark
Initial UE Identity	Set to the same type as in RRC CONNECTION REQUEST message (step 1) but with a different value.

#### RRC CONNECTION REJECT (Step 4)

Information Element	Value/remark
All IEs	Not Present

#### RRC CONNECTION REJECT (Step 6)

Use the same message type found in [Annex A clause 9 of TS 34.108](#), with the following exception.

Information Element	Value/remark
Initial UE Identity	Same as the type and value defined in RRC CONNECTION REQUEST message (step 5)
Reject Cause	Congestion
Wait time	0 second

#### 8.1.2.6.5 Test requirement

After step 2 the UE shall transmit an RRC CONNECTION REQUEST message on uplink CCCH upon expiry of T300 timer.

After step 4 the UE shall re-transmit an RRC CONNECTION REQUEST message on the uplink CCCH upon expiry of T300 timer.

After step 6 the UE shall stop sending an RRC CONNECTION REQUEST message, go back to idle mode immediately and not transmit in the uplink direction again.

*<Next change>*

#### 8.1.3.9 RRC Connection Release in CELL\_DCH state (Network Authentication Failure): Success

##### 8.1.3.9.1 Definition

##### 8.1.3.9.2 Conformance requirement

###### 1. TS 25.331

If the upper layers request the release of the RRC connection, the UE shall:

- 1> release all its radio resources;
- 1> enter idle mode;
- 1> perform other actions when entering idle mode from connected mode as specified in subclause 8.5.2;
- 1> if the UE was in CELL\_DCH state prior to entering idle mode:
  - 2> consider all cells that were in the active set prior to entering idle mode to be barred according to [4]; and
  - 2> consider the barred cells as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE "T<sub>barred</sub>".

###### 2. TS 24.008

Following a UMTS authentication challenge, the MS may reject the core network, on the grounds of an incorrect AUTN parameter (see 3GPP TS 33.102). This parameter contains two possible causes for authentication failure:

....

SQN failure:

If the MS considers the SQN (supplied by the core network in the AUTN parameter) to be out of range, it shall send a AUTHENTICATION FAILURE message to the network, with the reject cause 'Synch failure' and a re-synchronization token AUTS provided by the SIM (see 3GPP TS 33.102). The MS shall then follow the procedure described in clause 4.3.2.6 (d) of TS 24.008.

....

Authentication failure (reject cause 'synch failure'):

The MS shall send an AUTHENTICATION FAILURE message, with reject cause 'synch failure,' to the network and start the timer T3216.



....

If the timer T3216 expires, then the MS shall behave as described in clause 4.3.2.6.1 of TS 24.008.

### Reference

3GPP TS 25.331 clause 8.1.4a.  
3GPP TS 24.008 clause 4.3.2.5.1, 4.3.2.6

#### 8.1.3.9.3 Test purpose

To confirm that when the upper layers request the release of the RRC connection, the UE releases signalling radio bearer and its radio resources and goes back to idle mode.  
To confirm that the UE enters idle mode, bars the cell for a period  $T_{\text{barred}}$  and hence performs cell-selection to another (non-barred) cell.

#### 8.1.3.9.4 Method of test

### Initial Condition

System Simulator: 3 cells – Cell 1,2 and 3 are active.  
UE: "CS-DCCH+DTCH\_DCH" (state 6-9) or " PS-DCCH+DTCH\_DCH " (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

### Test Procedure

Table 8.1.3.9 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1" are to be applied subsequently. The exact instants on which these values shall be applied are described in the text in this clause.

**Table 8.1.3.9**

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T0	T1	T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1		Ch. 1	
CPICH Ec	dBm/3.84 MHz	-60	-60	-85	-65	-85	-70
<u>PCCPCH RSCP</u>	<u>dBm</u>	<u>-60</u>	<u>-60</u>	<u>-85</u>	<u>-65</u>	<u>-85</u>	<u>-70</u>

SS switches the downlink transmission power of the 3 cells to the columns "T1" in Table 8.1.3.9. UE transmits a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 and 3 according to IE "Intra-frequency event identity", which is set to '1a' [for FDD mode and `1g` for TDD mode](#) in the SYSTEM INFORMATION BLOCK TYPE 11. [For FDD, in steps 2 and 3, a](#)After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE in cell 1 an ACTIVE SET UPDATE message which includes IE "Radio Link Addition Information", indicating the addition of cell 2 into the active set, on DCCH using AM RLC.

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. The SS transmits a DOWNLINK DIRECT TRANSFER message. This message contains a NAS message (AUTHENTICATION REQUEST for CS domain or AUTHENTICATION AND CIPHERING REQUEST for PS domain) and an invalid SQN. The UE shall transmit an UPLINK DIRECT TRANSFER message using AM on DCCH. After SS acknowledges the UPLINK DIRECT TRANSFER message, SS shall wait for T3216 or T3320 to expire in the UE. The UE shall then deem that the network has failed the authentication check, release the RRC connection, enter idle mode, bar cell 1 and 2 and perform cell re- selection. Then SS wait for 5 s. SS transmits PAGING TYPE 1 message. The UE shall respond with RRC CONNECTION REQUEST message in cell 3. SS then transmit RRC

CONNECTION REJECT message back to UE. SS then waits for  $T_{\text{barred}}$  to expire (22 minutes) before SS execute generic procedure C.1 in cell 1 to check that UE is in idle mode in cell 1.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

#### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		→	MEASUREMENT REPORT	See specific message contents for this message.
2		←	ACTIVE SET UPDATE	The SS transmit this message on downlink DCCH using AM RLC which includes IE "Radio Link Addition Information" for cell 2. <a href="#">This step will be only applicable for FDD.</a>
3		→	ACTIVE SET UPDATE COMPLETE	The UE adds the radio link in cell 2. <a href="#">This step will be only applicable for FDD.</a>
4		←	DOWNLINK DIRECT TRANSFER	Depending on supported CN domain, AUTHENTICATION AND CIPHERING REQUEST message (PS domain) or AUTHENTICATION REQUEST (CS domain) message is embedded in DOWNLINK DIRECT TRANSFER message. An invalid SQN is provided in this message.
5		→	UPLINK DIRECT TRANSFER	After SS acknowledged this message, SS waits for T3216 or T3320 to expire.
6				The SS waits for 5s
7		←	PAGING TYPE 1	
8		→	RRC CONNECTION REQUEST	SS checks that the UE sends this message in cell 3
9		←	RRC CONNECTION REJECT	
10				SS waits 22 minutes for $T_{\text{barred}}$ to expire.
11		↔	CALL C.1	SS execute this generic procedure in cell 1. If the test result of C.1 indicates that UE is in idle mode, the test passes, otherwise it fails.

Specific Message Content

MEASUREMENT REPORT (Step 1) (FDD)

Information Element	Value/remark
<p>Message Type Integrity check info</p> <ul style="list-style-type: none"> <li>- Message authentication code</li>   <li>- RRC Message sequence number</li> </ul> <p>Measurement identity Measured Results</p> <ul style="list-style-type: none"> <li>- Intra-frequency measured results</li> <li>- Cell measured results <ul style="list-style-type: none"> <li>- Cell Identity</li> <li>- SFN-SFN observed time difference</li> <li>- Cell synchronisation information</li> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> </ul> </li>   <li>- CPICH Ec/N0</li> <li>- CPICH RSCP</li> <li>- Pathloss</li> <li>- Cell measured results <ul style="list-style-type: none"> <li>- Cell Identity</li> <li>- SFN-SFN observed time difference</li> <li>- Cell synchronisation information</li> </ul> </li>   <li>- Primary CPICH info</li> <li>- Primary scrambling code</li>   <li>- CPICH Ec/N0</li> <li>- CPICH RSCP</li> <li>- Pathloss</li> <li>- Cell measured results <ul style="list-style-type: none"> <li>- Cell Identity</li> <li>- SFN-SFN observed time difference</li> <li>- Cell synchronisation information</li> </ul> </li>   <li>- Primary CPICH info</li> <li>- Primary scrambling code</li>   <li>- CPICH Ec/N0</li> <li>- CPICH RSCP</li> <li>- Pathloss</li> </ul> <p>Measured results on RACH Additional measured results Event results</p> <ul style="list-style-type: none"> <li>- Intra-frequency measurement event results <ul style="list-style-type: none"> <li>- Intra-frequency event identity</li> <li>- Cell measurement event results <ul style="list-style-type: none"> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> </ul> </li> </ul> </li> </ul>	<p>This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.</p> <p>This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.</p> <p>1</p> <p>Checked that this IE is absent Checked that this IE is absent Checked that this IE is absent</p> <p>Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent</p> <p>Checked that this IE is absent Checked that this IE is absent Checked that this IE is present and includes IE COUNT-C-SFN frame difference</p> <p>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent</p> <p>Checked that this IE is absent Checked that this IE is absent Checked that this IE is present and includes IE COUNT-C-SFN frame difference</p> <p>Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent Checked that this IE is absent Checked that this IE is absent</p> <p>1a</p> <p>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108</p>

MEASUREMENT REPORT (Step 1) (TDD)

Information Element	Value/remark
<a href="#">Message Type</a>	
<a href="#">Integrity check info</a>	
<a href="#">- Message authentication code</a>	<a href="#">This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.</a>
<a href="#">- RRC Message sequence Id</a>	<a href="#">This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.</a>
	1
<a href="#">Measurement identity</a>	
<a href="#">Measured Results</a>	
<a href="#">- Intra-frequency measured results</a>	
<a href="#">- Cell measured results</a>	
<a href="#">- Cell Identity</a>	<a href="#">Checked that this IE is absent</a>
<a href="#">- SFN-SFN observed time difference</a>	<a href="#">Checked that this IE is absent</a>
<a href="#">- Cell synchronisation information</a>	<a href="#">Checked that this IE is absent</a>
<a href="#">- CHOICE Mode</a>	TDD
<a href="#">- Cell parameters Id</a>	<a href="#">Refer to clause titled "Default settings for cell No.1 (TDD)" in clause 6.1 of TS 34.108</a>
<a href="#">- Primary CCPCH RSCP Info</a>	<a href="#">Checked that this IE is absent</a>
<a href="#">- PCCPCH RSCP</a>	<a href="#">"Checked to see if set to within an acceptable range"</a>
<a href="#">- Pathloss</a>	<a href="#">Checked that this IE is absent</a>
<a href="#">- Cell measured results</a>	
<a href="#">- Cell Identity</a>	<a href="#">Checked that this IE is absent</a>
<a href="#">- SFN-SFN observed time difference</a>	<a href="#">Checked that this IE is absent</a>
<a href="#">- Cell synchronisation information</a>	<a href="#">Checked that this IE is present and includes IE COUNT-C-SFN frame difference</a>
<a href="#">- CHOICE Mode</a>	TDD
<a href="#">- Cell parameters Id</a>	<a href="#">Refer to clause titled "Default settings for cell No.2 (TDD)" in clause 6.1 of TS 34.108</a>
<a href="#">- Primary CCPCH RSCP Info</a>	<a href="#">Checked that this IE is absent</a>
<a href="#">- PCCPCH RSCP</a>	<a href="#">"Checked to see if set to within an acceptable range"</a>
<a href="#">- Pathloss</a>	<a href="#">Checked that this IE is absent</a>
<a href="#">- Cell measured results</a>	
<a href="#">- Cell Identity</a>	<a href="#">Checked that this IE is absent</a>
<a href="#">- SFN-SFN observed time difference</a>	<a href="#">Checked that this IE is absent</a>
<a href="#">- Cell synchronisation information</a>	<a href="#">Checked that this IE is present and includes IE COUNT-C-SFN frame difference</a>
<a href="#">- CHOICE Mode</a>	TDD
<a href="#">- Cell parameters Id</a>	<a href="#">Refer to clause titled "Default settings for cell No.3 (TDD)" in clause 6.1 of TS 34.108</a>
<a href="#">- Primary CCPCH RSCP Info</a>	<a href="#">Checked that this IE is absent</a>
<a href="#">- PCCPCH RSCP</a>	<a href="#">"Checked to see if set to within an acceptable range"</a>
<a href="#">- Pathloss</a>	<a href="#">Checked that this IE is absent</a>
<a href="#">Measured results on RACH</a>	
<a href="#">Additional measured results</a>	
<a href="#">Event results</a>	
<a href="#">- Intra-frequency measurement event results</a>	
<a href="#">- Intra-frequency event identity</a>	1g
<a href="#">- Cell measurement event results</a>	
<a href="#">CHOICE Mode</a>	TDD
<a href="#">- Cell parameters Id</a>	<a href="#">Refer to clause titled "Default settings for cell No.2 (TDD)" in clause 6.1 of TS 34.108</a>

### ACTIVE SET UPDATE (Step 2) [\(FDD only\)](#)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Radio link addition information	
- Primary CPICH Info	Set to same code as assigned for cell 2
- Primary Scrambling Code	
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	Calculated value from Cell synchronisation information
- Secondary CPICH info	Not Present
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE
- Secondary scrambling code	1
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	Not Present
- TPC Combination Index	0
- SSDT Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	Not Present
- SCCPCH information for FACH	Not Present

### ACTIVE SET UPDATE COMPLETE (Step 3) [\(FDD only\)](#)

Only the message type of this message is checked.

### DOWNLINK DIRECT TRANSFER (Step 4)

Use the same message sub-type as found in TS 34.108 clause 9, with the following exceptions.

Information Element	Value/remark
CN domain identity NAS message	CS domain or PS domain AUTHENTICATION REQUEST (CS domain) or AUTHENTICATION AND CIPHERING REQUEST (PS domain) with an invalid SQN value.

### UPLINK DIRECT TRANSFER (Step 5)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
CN domain identity	CS domain or PS domain
NAS message	AUTHENTICATION FAILURE(CS domain) or AUTHENTICATION AND CIPHERING FAILURE (PS domain)
Measured results on RACH	Not checked

#### 8.1.3.9.5 Test requirement

At step 1 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 2 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH.

After step 4 the UE shall transmit an UPLINK DIRECT TRANSFER messages using AM on DCCH.  
After step 7, the UE shall transmit RRC CONNECTION REQUEST message using TM RLC on CCCH in cell 3.

After step 10 the UE shall be in idle mode in cell 1.

#### 8.1.4 Void

#### 8.1.5 UE capability

##### 8.1.5.1 UE Capability in CELL\_DCH state: Success

###### 8.1.5.1.1 Definition

###### 8.1.5.1.2 Conformance requirement

The UE shall initiate the UE capability update procedure in the following situations:

- 1> the UE receives a UE CAPABILITY ENQUIRY message from the UTRAN;

...

If the UE CAPABILITY INFORMATION message is sent in response to a UE CAPABILITY ENQUIRY message, the UE shall:

- 1> include the IE "RRC transaction identifier"; and
- 1> set it to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> retrieve its UTRA UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and
- 1> include this in IE "UE radio access capability" and in IE "UE radio access capability extension", provided this IE is included in variable UE\_CAPABILITY\_REQUESTED;
- 1> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and
- 1> include this in IE "UE system specific capability".

The UE RRC shall submit the UE CAPABILITY INFORMATION message to the lower layers for transmission on the uplink DCCH using AM RLC. When the message has been delivered to lower layers for transmission the UE RRC shall start timer T304 and set counter V304 to 1.

Upon reception of a UE CAPABILITY INFORMATION CONFIRM message, the UE shall:

- 1> stop timer T304;

...

- 1> and the procedure ends.

If the UE receives a UE CAPABILITY INFORMATION CONFIRM message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows:

- 1> stop timer T304;
- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to UE CAPABILITY INFORMATION CONFIRM; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY INFORMATION CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS; and

- 1> clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION;
- 1> when the RRC STATUS message has been submitted to lower layers for transmission:
  - 2> restart timer T304 and continue with any ongoing procedures or processes as if the invalid UE CAPABILITY INFORMATION CONFIRM message has not been received.

...

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, containing an undefined critical message extension, the UE shall:

- 1> set the variable PROTOCOL\_ERROR\_REJECT to TRUE;
- 1> set the IE "Protocol error cause" in the variable PROTOCOL\_ERROR\_INFORMATION to "Message extension not comprehended";
- 1> if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:
  - 2> store the IE "Message type" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS; and
  - 2> set the IE "RRC transaction identifier" to zero in that table entry.
- 1> perform procedure specific error handling according to TS 25.331 clause 8.

## Reference

3GPP TS 25.331 clauses 8.1.6 and 8.1.7.9.3b.

### 8.1.5.1.3 Test purpose

1. To confirm that the UE transmits a UE CAPABILITY INFORMATION message after it receives a UE CAPABILITY ENQUIRY message from the SS.
2. To confirm that the UE indicates an invalid message reception when invalid UE CAPABILITY ENQUIRY and UE CAPABILITY INFORMATION CONFIRM messages are received. The UE shall transmit RRC STATUS message with the correct error cause value to SS.

### 8.1.5.1.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: CELL\_DCH state (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

#### Test Procedure

The UE is brought to the CELL\_DCH state after a successful outgoing call attempt. The SS transmits a UE CAPABILITY ENQUIRY message containing an unexpected critical message extension. After receiving such a message, the UE shall report the error using RRC STATUS message with the appropriate error cause specified. Then SS transmits a correct UE CAPABILITY ENQUIRY message, the UE receives this message and transmits a UE CAPABILITY INFORMATION message on the uplink DCCH which includes the requested capabilities. The SS transmits a UE CAPABILITY INFORMATION CONFIRM message to the UE to complete the UE capability enquiry procedure. Then SS initiates another UE capability enquiry procedure. The UE shall reply with a UE CAPABILITY INFORMATION message on the uplink DCCH. When SS receives this message, it transmits a UE CAPABILITY INFORMATION CONFIRM message containing an unexpected critical message extension. The UE shall detect an error and send an RRC STATUS message to report this event. After submitting this message to lower layers for transmission, the UE shall re-transmit a UE CAPABILITY

INFORMATION message on the uplink DCCH after the expiry of restarted T304. SS then transmits an error-free UE CAPABILITY INFORMATION CONFIRM message similar to the message sent in step 6.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_DCH state after an outgoing call has been established successfully.
2		←	UE CAPABILITY ENQUIRY	See specific message contents for this message
3		→	RRC STATUS	See specific message contents for this message
4		←	UE CAPABILITY ENQUIRY	See specific message contents for this message.
5		→	UE CAPABILITY INFORMATION	See specific message contents for this message.
6		←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
7		←	UE CAPABILITY ENQUIRY	Same as in step 4.
8		→	UE CAPABILITY INFORMATION	Shall be the same message content as in step 5.
9		←	UE CAPABILITY INFORMATION CONFIRM	See specific message contents for this message
10		→	RRC STATUS	UE shall detect an error and then transmit this message.
11		→	UE CAPABILITY INFORMATION	UE shall re-transmit this message after the restarted T304 expires.
12		←	UE CAPABILITY INFORMATION CONFIRM	SS sends an error-free message to acknowledge the receipt of the uplink message.

### Specific Message Contents

#### UE CAPABILITY ENQUIRY (Step 2)

SS sends a message containing a critical extension not defined for the protocol release supported by the UE, as indicated in the IE "Access stratum release indicator":

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects an integer between 0 and 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Critical extensions	'01'H

#### RRC STATUS (Step 3)

Check to see if the same message type found in TS 34.108, clause 9 is received, with the following exceptions:



Information Element	Value/remark
Identification of received message - Received message type - RRC transaction identifier  Protocol Error Information - Protocol Error Cause	UE Capability Enquiry Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY ENQUIRY message.  Message extension not comprehended

Information Element	Value/remark
Identification of received message - Received message type - RRC transaction identifier  Protocol Error Information - Protocol Error Cause	UE Capability Enquiry Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY ENQUIRY message.  Message extension not comprehended

#### UE CAPABILITY ENQUIRY (Steps 4) [\(FDD\)](#)

Use the UE CAPABILITY ENQUIRY message as defined in [9] (TS 34.108) Clause 9, with the following exceptions:

Information Element	Value/remark
Capability update requirement - UE radio access FDD capability update requirement - UE radio access TDD capability update requirement - System specific capability update requirement list	TRUE  FALSE  Gsm

#### [UE CAPABILITY ENQUIRY \(Steps 4\) \(TDD\)](#)

[Use the UE CAPABILITY ENQUIRY message as defined in \[9\] \(TS 34.108\) Clause 9, with the following exceptions:](#)

<a href="#">Information Element</a>	<a href="#">Value/remark</a>
<a href="#">Capability update requirement</a> <a href="#">- UE radio access FDD capability update requirement</a> <a href="#">- UE radio access TDD capability update requirement</a> <a href="#">- System specific capability update requirement list</a>	<a href="#">FALSE</a>  <a href="#">TRUE</a>  <a href="#">Gsm</a>

#### UE CAPABILITY INFORMATION (Step 5)

Check to see if the same message type found in [9] (TS 34.108) Clause 9 is received, with the following exceptions:

Information Element	Value/remark
UE system specific capability	Presence and value will be checked. Stated capability must be compatible with 34.123-2 (ICS statements) and the user settings

#### UE CAPABILITY INFORMATION CONFIRM (Step 9)

SS sends a message containing a critical extension not defined for the protocol release supported by the UE, as indicated in the IE "Access stratum release indicator". Use the UE CAPABILITY INFORMATION CONFIRM message as defined in [9] (TS 34.108) Clause 9, with the following addition:

Information Element	Value/remark
Critical extensions	'01'H

## RRC STATUS (Step 10)

Check to see if the same message type found in TS 34.108, clause 9 is received, with the following exceptions:

Information Element	Value/remark
Identification of received message - Received message type - RRC transaction identifier	UE Capability Information Confirm Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY INFORMATION CONFIRM message.
Protocol Error Information - Protocol Error Cause	Message extension not comprehended

### 8.1.5.1.5 Test requirement

After step 2, the UE shall transmit a RRC STATUS message on the uplink DCCH, reporting the error with protocol error cause set to "Message extension not comprehended" correct transaction identifier. After step 4 and 7 the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH to respond to the UE CAPABILITY ENQUIRY message with correct contents. After step 9, the UE shall transmit a RRC STATUS message on the uplink DCCH. The protocol error cause shall be set to "Message extension not comprehended" and the transaction identifier set to the same value as used in the UE CAPABILITY ENQUIRY message of step 7. After step 10, the UE shall re-transmit the UE CAPABILITY INFORMATION message with a similar content as in step 8 after the expiry of restarted T304.

### 8.1.5.2 UE Capability in CELL\_DCH state: Success after T304 timeout

#### 8.1.5.2.1 Definition

#### 8.1.5.2.2 Conformance requirement

The UE shall initiate the UE capability update procedure in the following situations:

- 1> the UE receives a UE CAPABILITY ENQUIRY message from the UTRAN on the DCCH using UM or AM RLC;
- 1> while in connected mode the UE capabilities change compared to those stored in the variable UE\_CAPABILITY\_TRANSFERRED.

If the UE CAPABILITY INFORMATION message is sent in response to a UE CAPABILITY ENQUIRY message, the UE shall:

- 1> include the IE "RRC transaction identifier"; and
- 1> set it to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> retrieve its UTRA UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and
- 1> include this in IE "UE radio access capability" and in IE "UE radio access capability extension", provided this IE is included in variable UE\_CAPABILITY\_REQUESTED;
- 1> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and
- 1> include this in IE "UE system specific capability".

If the UE CAPABILITY INFORMATION message is sent because one or more of the UE capabilities change compared to those stored in the variable UE\_CAPABILITY\_TRANSFERRED while in connected state, the UE shall include the information elements associated with the capabilities that have changed in the UE CAPABILITY INFORMATION message.

...

The UE RRC shall submit the UE CAPABILITY INFORMATION message to the lower layers for transmission on the uplink DCCH using AM RLC. When the message has been delivered to lower layers for transmission the UE RRC shall start timer T304 and set counter V304 to 1.

Upon expiry of timer T304, the UE shall check the value of V304 and:

1> if V304 is smaller than or equal to N304:

2> prior to retransmitting the UE CAPABILITY INFORMATION message:

3> if the IE "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started":

4> include the same IEs as in the last unsuccessful attempt of this message, except for the IE "Integrity check info", which is modified as follows:

5> increment the "Uplink RRC Message sequence number" for signalling radio bearer RB2 in the variable INTEGRITY\_PROTECTION\_INFO by one;

5> set the IE "RRC Message sequence number" in the IE "Integrity check info" by the value of the "Uplink RRC Message sequence number" for signalling radio bearer RB2 in the variable INTEGRITY\_PROTECTION\_INFO in this message;

5> recalculate the IE "Message authentication code" in the IE "Integrity check info" in this message, in accordance with TS 25.331 subclause 8.5.10.3.

3> else:

4> include the same IEs as in the last unsuccessful attempt of this message.

2> send the UE CAPABILITY INFORMATION message on signalling radio bearer RB2;

2> restart timer T304;

2> increment counter V304.

...

## Reference

3GPP TS 25.331 clause 8.1.6 and 8.1.7.

### 8.1.5.2.3 Test purpose

To confirm that the UE re-transmits a UE CAPABILITY INFORMATION message until V304 is greater than N304, after the expiry of timer T304 when the UE cannot receive a UE CAPABILITY INFORMATION CONFIRM message in response to a UE CAPABILITY INFORMATION message.

### 8.1.5.2.4 Method of test

## Initial Condition

System Simulator: 1 cell.

UE: CELL\_DCH state (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

## Test Procedure

The UE is brought to CELL\_DCH state. When the SS transmits a UE CAPABILITY ENQUIRY message which includes the "Capability update requirement" IE, the UE shall reply with a UE CAPABILITY INFORMATION message on the uplink DCCH which includes the "UE radio access capability" IE. The SS does not transmit a UE CAPABILITY INFORMATION CONFIRM message to the UE, resulting in the T304 timer to expire. SS shall observe that the UE attempts to transmit a UE CAPABILITY INFORMATION message again. The UE shall re-transmit N304 times, and SS transmits a UE CAPABILITY INFORMATION CONFIRM message to answer the last request and completes this test procedure.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_DCH state. SS sets internal counter K =0
2		←	UE CAPABILITY ENQUIRY	Including the IE "Capability update requirement".
3		→	UE CAPABILITY INFORMATION	Including the "UE radio access capability".
4				If K is equal to N304, then proceed to step 6.
5				The SS does not transmit a response and wait for T304 timer to expire. K=K+1 and goes to step 3.
6		←	UE CAPABILITY INFORMATION CONFIRM	Use default message contents

## Specific Message Contents

None

### 8.1.5.2.5 Test requirement

After step 3 the UE shall re-transmits a UE CAPABILITY INFORMATION message on the uplink DCCH, after each expiry of timer T304. The UE CAPABILITY INFORMATION message shall contain IE "UE radio access capability" indicating the settings found in PIC/PIXIT statements. After (N304) re-transmissions, the UE shall receive a UE CAPABILITY INFORMATION CONFIRM message.

### 8.1.5.3 UE Capability in CELL\_DCH state: Failure (After N304 re-transmissions)

#### 8.1.5.3.1 Definition

#### 8.1.5.3.2 Conformance requirement

The UE shall initiate the UE capability update procedure in the following situations:

- 1> the UE receives a UE CAPABILITY ENQUIRY message from the UTRAN on the DCCH using UM or AM RLC;
- 1> while in connected mode the UE capabilities change compared to those stored in the variable UE\_CAPABILITY\_TRANSFERRED.

If the UE CAPABILITY INFORMATION message is sent in response to a UE CAPABILITY ENQUIRY message, the UE shall:

- 1> include the IE "RRC transaction identifier"; and
- 1> set it to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> retrieve its UTRA UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and
- 1> include this in IE "UE radio access capability" and in IE "UE radio access capability extension", provided this IE is included in variable UE\_CAPABILITY\_REQUESTED;
- 1> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and
- 1> include this in IE "UE system specific capability".

If the UE CAPABILITY INFORMATION message is sent because one or more of the UE capabilities change compared to those stored in the variable UE\_CAPABILITY\_TRANSFERRED while in connected state, the UE shall include the information elements associated with the capabilities that have changed in the UE CAPABILITY INFORMATION message.

...

The UE RRC shall submit the UE CAPABILITY INFORMATION message to the lower layers for transmission on the uplink DCCH using AM RLC. When the message has been delivered to lower layers for transmission the UE RRC shall start timer T304 and set counter V304 to 1.

Upon expiry of timer T304, the UE shall check the value of V304 and:

1> if V304 is smaller than or equal to N304:

2> prior to retransmitting the UE CAPABILITY INFORMATION message:

3> if the IE "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started":

4> include the same IEs as in the last unsuccessful attempt of this message, except for the IE "Integrity check info", which is modified as follows:

5> increment the "Uplink RRC Message sequence number" for signalling radio bearer RB2 in the variable INTEGRITY\_PROTECTION\_INFO by one;

5> set the IE "RRC Message sequence number" in the IE "Integrity check info" by the value of the "Uplink RRC Message sequence number" for signalling radio bearer RB2 in the variable INTEGRITY\_PROTECTION\_INFO in this message;

5> recalculate the IE "Message authentication code" in the IE "Integrity check info" in this message, in accordance with TS 25.331 subclause 8.5.10.3.

3> else:

4> include the same IEs as in the last unsuccessful attempt of this message.

2> send the UE CAPABILITY INFORMATION message on signalling radio bearer RB2;

2> restart timer T304;

2> increment counter V304.

1> if V304 is greater than N304:

2> initiate the Cell update procedure as specified in TS 25.331 subclause 8.3.1, using the cause "Radio link failure".

## Reference

3GPP TS 25.331 clauses 8.1.6 and 8.1.7.

8.1.5.3.3 Test purpose

To confirm that the UE stops retrying to transmit a UE CAPABILITY INFORMATION message if V304 is greater than N304. It then initiates cell update procedure.

8.1.5.3.4 Method of test

## Initial Condition

System Simulator: 1 cell.

UE: CELL\_DCH state (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

## Test Procedure

The UE is brought to CELL\_DCH state. When the SS transmits a UE CAPABILITY ENQUIRY message which includes the "Capability update requirement" IE, the UE receives this message and

transmits a UE CAPABILITY INFORMATION message on the uplink DCCH which includes the "UE radio access capability" IE. The SS does not respond with a UE CAPABILITY INFORMATION CONFIRM message but keeps a count on the number of messages received. When the T304 timer expires, the UE shall transmit a UE CAPABILITY INFORMATION message again. After sending (N304+1) messages, the UE shall stop sending UE CAPABILITY INFORMATION messages and initiates the cell update procedure. SS allows UE to return to "connected state" by issuing CELL UPDATE CONFIRM message on the downlink DCCH. Then UE shall reconfigured its physical channel according to the CELL UPDATE CONFIRM message and respond with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to SS.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE starts from CELL_DCH state. SS sets counter K to 0
2		←	UE CAPABILITY ENQUIRY	Use default message
3		→	UE CAPABILITY INFORMATION	Use default message
4				The SS does not transmit a response and allows T304 timer to expire. SS increments counter K If K is greater than N304, proceeds to step 5 else returns to 3.
5		→	CELL UPDATE	The UE assumes that radio link failure has occurred and transmits this message which includes IE "Cell update cause" set to "radio link failure".
6		←	CELL UPDATE CONFIRM	This message include IE "Physical channel information elements".
7				The SS configure the dedicated physical channel according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
8		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

CELL UPDATE CONFIRM (Step 6) - FDD

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in [Annex A clause 9 of TS 34.108](#) with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 5
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Reference to TS34.108 clause 5.1 Test frequencies
- UARFCN downlink(Nd)	Reference to TS34.108 clause 5.1 Test frequencies
Maximum allowed UL TX power	33dBm
CHOICE Mode	FDD
Downlink information for each radio links	
- Primary CPICH info	
- Primary scrambling code	100
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	Not Present
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	0 chips
- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	2
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set SF-1(SF is reference to TS34.108 clause 6.10 Parameter Set)
- Code number	No change
- Scrambling code change	0
- TPC combination index	-a
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH	Not Present

#### CELL UPDATE CONFIRM (Step 6) – 3.84 Mcps TDD

[The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in clause 9 of TS 34.108 with the following exceptions:](#)

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 5
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to TS34.108 clause 5.1 Test frequencies
Maximum allowed UL TX power	30dBm
CHOICE Mode	TDD
Downlink information for each radio links	
- Primary CCPCH info	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- CHOICE SyncCase	Not Present
- Cell Parameters ID	Not Present
- Block STTD indicator	FALSE
- Downlink DPCH info for each RL	
- CHOICE mode	TDD
- DL CCTrCh List	
- TFCS ID	1
- Time info	
- Activation time	Not Present (default)
- Duration	Not Present (default)
- Common timeslot info	Not Present (default)
- Downlink DPCH timeslots and codes	Not Present (default)
- UL CCTrCH TPC List	Not Present (default)

#### CELL UPDATE CONFIRM (Step 6) – 1.28 Mcps TDD

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in [Annex A-clause 9 of TS 34.108](#) with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 5
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to TS34.108 clause 5.1 Test frequencies
Maximum allowed UL TX power	30dBm
CHOICE Mode	TDD
Downlink information for each radio links	
- Primary CCPCH info	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- TSTD indicator	FALSE
- Cell Parameters ID	Not Present
- Block STTD indicator	FALSE
- Downlink DPCH info for each RL	
- CHOICE mode	TDD
- DL CCTrCh List	
- TFCS ID	1
- Time info	
- Activation time	Not Present (default)
- Duration	Not Present (default)
- Common timeslot info	Not Present (default)
- Downlink DPCH timeslots and codes	Not Present (default)
- UL CCTrCH TPC List	Not Present (default)

#### 8.1.5.3.5 Test requirement

After step 2, the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH. The UE shall re-transmit this message for N304 times.

After step 4, the UE shall initiate the cell update procedure.

After step 6, UE shall respond with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message after it has configured L1 according to the CELL UPDATE CONFIRM message in step 6.

#### 8.1.5.4 UE Capability in CELL\_FACH state: Success

##### 8.1.5.4.1 Definition

##### 8.1.5.4.2 Conformance requirement

The UE shall initiate the UE capability update procedure in the following situations:

- 1> the UE receives a UE CAPABILITY ENQUIRY message from the UTRAN;

...

If the UE CAPABILITY INFORMATION message is sent in response to a UE CAPABILITY ENQUIRY message, the UE shall:

- 1> include the IE "RRC transaction identifier"; and
- 1> set it to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> retrieve its UTRA UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and
- 1> include this in IE "UE radio access capability" and in IE "UE radio access capability extension", provided this IE is included in variable UE\_CAPABILITY\_REQUESTED;
- 1> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and
- 1> include this in IE "UE system specific capability".



The UE RRC shall submit the UE CAPABILITY INFORMATION message to the lower layers for transmission on the uplink DCCH using AM RLC. When the message has been delivered to lower layers for transmission the UE RRC shall start timer T304 and set counter V304 to 1.

Upon reception of a UE CAPABILITY INFORMATION CONFIRM message, the UE shall:

1> stop timer T304;

...

1> and the procedure ends.

If the UE receives a UE CAPABILITY INFORMATION CONFIRM message, which contains a protocol error causing the variable `PROTOCOL_ERROR_REJECT` to be set to `TRUE` according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows:

1> stop timer T304;

1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;

1> include the IE "Identification of received message"; and

1> set the IE "Received message type" to UE CAPABILITY INFORMATION CONFIRM; and

1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY INFORMATION CONFIRM message in the table "Rejected transactions" in the variable `TRANSACTIONS`; and

1> clear that entry;

1> include the IE "Protocol error information" with contents set to the value of the variable `PROTOCOL_ERROR_INFORMATION`;

1> when the RRC STATUS message has been submitted to lower layers for transmission:

2> restart timer T304 and continue with any ongoing procedures or processes as if the invalid UE CAPABILITY INFORMATION CONFIRM message has not been received.

...

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, containing an undefined critical message extension, the UE shall:

1> set the variable `PROTOCOL_ERROR_REJECT` to `TRUE`;

1> set the IE "Protocol error cause" in the variable `PROTOCOL_ERROR_INFORMATION` to "Message extension not comprehended";

1> if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable `TRANSACTIONS`:

2> store the IE "Message type" of the received message in the table "Rejected transactions" in the variable `TRANSACTIONS`; and

2> set the IE "RRC transaction identifier" to zero in that table entry.

1> perform procedure specific error handling according to TS 25.331 clause 8.

## Reference

3GPP TS 25.331 clauses 8.1.6 and 8.1.7.9.3b.

### 8.1.5.4.3 Test purpose

1. To confirm that the UE transmits a UE CAPABILITY INFORMATION message after it receives a UE CAPABILITY ENQUIRY message from the SS.
2. To confirm that the UE indicates an invalid message reception when invalid UE CAPABILITY ENQUIRY and UE CAPABILITY INFORMATION CONFIRM messages are received. The UE shall transmit RRC STATUS message with the correct error cause value to SS.

## 8.1.5.4.4

## Method of test

## Initial Condition

System Simulator: 1 cell.

UE: CELL\_FACH state (state 6-11) as specified in clause 7.4 of TS 34.108.

## Test Procedure

The UE is brought to the CELL\_FACH state after a successful outgoing call attempt. The SS transmits a UE CAPABILITY ENQUIRY message containing an unexpected critical message extension. After receiving such a message, the UE shall report an error using RRC STATUS message with the appropriate error cause specified. Then SS transmits a UE CAPABILITY ENQUIRY message which includes the IE "Capability update requirement". After UE receives this message, it transmits a UE CAPABILITY INFORMATION message on the uplink DCCH, which includes the requested capabilities. The SS transmits a UE CAPABILITY INFORMATION CONFIRM message to the UE to complete the UE capability enquiry procedure.

Then SS initiates another UE capability enquiry procedure. The UE shall reply with a UE CAPABILITY INFORMATION message on the uplink DCCH. When SS receives this message, it transmits a UE CAPABILITY INFORMATION CONFIRM message containing an unexpected critical message extension. The UE shall detect an error and send an RRC STATUS message to report this event. After submitting this message to lower layers for transmission, the UE shall re-transmit a UE CAPABILITY INFORMATION message on the uplink DCCH upon the expiry of restarted T304. SS completes this test by sending an error-free UE CAPABILITY INFORMATION CONFIRM message similar to the message sent in step 6.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state after an outgoing call has been established successfully.
2		←	UE CAPABILITY ENQUIRY	See specific message contents for this message
3		→	RRC STATUS	See specific message contents for this message.
4		←	UE CAPABILITY ENQUIRY	Use default message.
5		→	UE CAPABILITY INFORMATION	Use default message.
6		←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
7		←	UE CAPABILITY ENQUIRY	Same as in step 4.
8		→	UE CAPABILITY INFORMATION	The message content shall be the same as in step 5.
9		←	UE CAPABILITY INFORMATION CONFIRM	See specific message contents for this message
10		→	RRC STATUS	UE shall detect an error and then transmit this message on uplink DCCH.
11		→	UE CAPABILITY INFORMATION	UE shall re-transmit this message after the restarted T304 expires.
12		←	UE CAPABILITY INFORMATION CONFIRM	SS sends an error-free message to acknowledge the receipt of the uplink message.

## Specific Message Contents

## UE CAPABILITY ENQUIRY (Step 2)

Use the UE CAPABILITY ENQUIRY message as defined in [9] (TS 34.108) Clause 9, with the following exceptions:

Information Element	Value/remark
Message Type	
RRC transaction identifier Integrity check info - Message authentication code  - RRC Message sequence number  Critical extensions	Arbitrarily selects an integer between 0 and 3  SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. '01'H

### RRC STATUS (Step 3)

Check to is the same message type found in TS 34.108, clause 9 is received, with the following exceptions:

Information Element	Value/remark
Identification of received message - Received message type RRC transaction identifier	UE Capability Enquiry Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY ENQUIRY message.
Protocol Error Information - Protocol Error Cause	Message extension not comprehended

### UE CAPABILITY INFORMATION CONFIRM (Step 9)

SS sends a message containing a critical extension not defined for the protocol release supported by the UE, as indicated in the IE "Access stratum release indicator". Use the UE CAPABILITY INFORMATION CONFIRM message as defined in [9] (TS 34.108) Clause 9, with the following addition:

Information Element	Value/remark
Critical extensions	'01'H

### RRC STATUS (Step 10)

Check to see if the same message type found in TS 34.108, clause 9 is received, with the following exceptions:

Information Element	Value/remark
Identification of received message - Received message type - RRC transaction identifier	UE Capability Information Confirm Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY INFORMATION CONFIRM message.
Protocol Error Information - Protocol Error Cause	Message extension not comprehended

#### 8.1.5.4.5 Test requirement

After step 2, the UE shall transmit a RRC STATUS message on the uplink DCCH, reporting the error with protocol error cause set to "Message extension not comprehended" correct transaction identifier. After step 4 and 7 the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH to respond to the downlink UE CAPABILITY ENQUIRY message with correct contents. After step 9, the UE shall transmit a RRC STATUS message on the uplink DCCH. The protocol error cause shall be set to "Message extension not comprehended" and the transaction identifier set to the same value as used in the UE CAPABILITY ENQUIRY message of step 7. After step 10, the UE shall re-transmit the UE CAPABILITY INFORMATION message with a similar content as in step 8 upon the expiry of restarted T304.

## 8.1.5.5 UE Capability in CELL\_FACH state: Success after T304 timeout

### 8.1.5.5.1 Definition

### 8.1.5.5.2 Conformance requirement

The UE shall initiate the UE capability update procedure in the following situations:

- 1> the UE receives a UE CAPABILITY ENQUIRY message from the UTRAN on the DCCH using UM or AM RLC;
- 1> while in connected mode the UE capabilities change compared to those stored in the variable UE\_CAPABILITY\_TRANSFERRED.

If the UE CAPABILITY INFORMATION message is sent in response to a UE CAPABILITY ENQUIRY message, the UE shall:

- 1> include the IE "RRC transaction identifier"; and
- 1> set it to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> retrieve its UTRA UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and
- 1> include this in IE "UE radio access capability" and in IE "UE radio access capability extension", provided this IE is included in variable UE\_CAPABILITY\_REQUESTED;
- 1> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and
- 1> include this in IE "UE system specific capability".

If the UE CAPABILITY INFORMATION message is sent because one or more of the UE capabilities change compared to those stored in the variable UE\_CAPABILITY\_TRANSFERRED while in connected state, the UE shall include the information elements associated with the capabilities that have changed in the UE CAPABILITY INFORMATION message.

...

The UE RRC shall submit the UE CAPABILITY INFORMATION message to the lower layers for transmission on the uplink DCCH using AM RLC. When the message has been delivered to lower layers for transmission the UE RRC shall start timer T304 and set counter V304 to 1.

Upon expiry of timer T304, the UE shall check the value of V304 and:

- 1> if V304 is smaller than or equal to N304:
  - 2> prior to retransmitting the UE CAPABILITY INFORMATION message:
    - 3> if the IE "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started":
      - 4> include the same IEs as in the last unsuccessful attempt of this message, except for the IE "Integrity check info", which is modified as follows:
        - 5> increment the "Uplink RRC Message sequence number" for signalling radio bearer RB2 in the variable INTEGRITY\_PROTECTION\_INFO by one;
        - 5> set the IE "RRC Message sequence number" in the IE "Integrity check info" by the value of the "Uplink RRC Message sequence number" for signalling radio bearer RB2 in the variable INTEGRITY\_PROTECTION\_INFO in this message;
        - 5> recalculate the IE "Message authentication code" in the IE "Integrity check info" in this message, in accordance with TS 25.331 subclause 8.5.10.3.
    - 3> else:
      - 4> include the same IEs as in the last unsuccessful attempt of this message.

- 2> send the UE CAPABILITY INFORMATION message on signalling radio bearer RB2;
- 2> restart timer T304;
- 2> increment counter V304.

...

#### Reference

3GPP TS 25.331 clauses 8.1.6 and 8.1.7.

#### 8.1.5.5.3 Test purpose

To confirm that the UE re-transmits a UE CAPABILITY INFORMATION message until V304 is greater than N304, after the expiry of timer T304 when it fails to receive a downlink UE CAPABILITY INFORMATION CONFIRM message in response to the uplink UE CAPABILITY INFORMATION message sent.

#### 8.1.5.5.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: CELL\_FACH state (state 6-11) as specified in clause 7.4 of TS 34.108.

#### Test Procedure

The UE is brought to CELL\_FACH state. When the SS transmits a UE CAPABILITY ENQUIRY message which includes the IE "Capability update requirement", the UE shall reply with a UE CAPABILITY INFORMATION message on the uplink DCCH that contains the IE "UE radio access capability". The SS waits and does not transmit a UE CAPABILITY INFORMATION CONFIRM message to the UE, resulting in the T304 timer to expire. SS shall observe that the UE attempts to transmit a UE CAPABILITY INFORMATION message again. The UE shall re-transmit N304 times, and SS transmits a UE CAPABILITY INFORMATION CONFIRM message to answer the last request and completes this test procedure.

#### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state. SS sets internal counter K =0
2		←	UE CAPABILITY ENQUIRY	Including the IE "Capability update requirement".
3		→	UE CAPABILITY INFORMATION	Including the IE "UE radio access capability".
4				If K equals N304, then proceeds to step 6. Else, continue with step 5.
5				The SS does not transmit a response and wait for T304 timer to expire. K=K+1 and goes to step 3.
6		←	UE CAPABILITY INFORMATION CONFIRM	Use default message contents

#### Specific Message Contents

None

#### 8.1.5.5.5 Test requirement

After step 3 the UE shall re-transmit a UE CAPABILITY INFORMATION message on the uplink DCCH, after each expiry of timer T304. The UE CAPABILITY INFORMATION message shall contain

IE "UE radio access capability" with the value matching those stated in the ICS/IXIT statements. After (N304) re-transmissions, the UE shall receive a UE CAPABILITY INFORMATION CONFIRM message.

## CHANGE REQUEST

⌘ **34.123-1 CR 610** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections and updates on 8.1.6 RRC Connection Management Procedure for TDD mode, Direct Transfer
<b>Source:</b>	⌘ Siemens AG
<b>Work item code:</b>	⌘ TEI <b>Date:</b> ⌘ 24/10/2003
<b>Category:</b>	⌘ <b>F</b> <b>Release:</b> ⌘ Rel-5
	<i>Use one of the following categories:</i>
	<b>F</b> (correction)
	<b>A</b> (corresponds to a correction in an earlier release)
	<b>B</b> (addition of feature),
	<b>C</b> (functional modification of feature)
	<b>D</b> (editorial modification)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .
	<i>Use one of the following releases:</i>
	<b>2</b> (GSM Phase 2)
	<b>R96</b> (Release 1996)
	<b>R97</b> (Release 1997)
	<b>R98</b> (Release 1998)
	<b>R99</b> (Release 1999)
	<b>Rel-4</b> (Release 4)
	<b>Rel-5</b> (Release 5)
	<b>Rel-6</b> (Release 6)

**Reason for change:** ⌘ Some corrections and updates are needed to apply RRC Connection Management Procedure to TDD mode

**Summary of change:** ⌘

- 8.1.6.3 Measurement Report on INITIAL DIRECT TRANSFER message and UPLINK DIRECT TRANSFER message
  - System Information Block type 11 (Step 1) for TDD included
  - RRC CONNECTION REQUEST (Step 3) for TDD included
  - INITIAL DIRECT TRANSFER ( SERVICE REQUEST ) (Step 6) for TDD included
  - UPLINK DIRECT TRANSFER( AUTHENTICATION AND CIPHERING RESPONSE ) (Step 8) for TDD included
  - UPLINK DIRECT TRANSFER( ACTIVATE PDP CONTEXT REQUEST ) (Step 11) for TDD included
  - Test Requirement specified for TDD.
- 8.1.6.4 UPLINK Direct Transfer (RLC re-establishment)
  - RRC CONNECTION SETUP updated for TDD mode

**Consequences if not approved:** ⌘ TDD option could not be tested properly

**Clauses affected:** ⌘ 8.1.6

**Other specs affected:**

Y	N		
<input type="checkbox"/>	<input type="checkbox"/>	Other core specifications	⌘
<input type="checkbox"/>	<input type="checkbox"/>	Test specifications	
<input type="checkbox"/>	<input type="checkbox"/>	O&M Specifications	

**Other comments:** ⌘ Revision of T1-031421, including CR number

### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.



## 8.1.6 Direct Transfer

### 8.1.6.1 Direct Transfer in CELL DCH state (invalid message reception and no signalling connection exists)

#### 8.1.6.1.1 Definition

#### 8.1.6.1.2 Conformance requirement

If the UE receives a DOWNLINK DIRECT TRANSFER message, and the signalling connection identified with the IE "CN domain identity" does not exist according to the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS, the UE shall:

- 1> ignore the content of the DOWNLINK DIRECT TRANSFER message;
- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to DOWNLINK DIRECT TRANSFER; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the DOWNLINK DIRECT TRANSFER message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state".

...

If the UE receives a DOWNLINK DIRECT TRANSFER message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to DOWNLINK DIRECT TRANSFER; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the DOWNLINK DIRECT TRANSFER message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION.

When the RRC STATUS message has been submitted to lower layers for transmission, the UE shall:

- 1> continue with any ongoing processes and procedures as if the DOWNLINK DIRECT TRANSFER message has not been received.

...

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, containing an undefined critical message extension, the UE shall:

- 1> set the variable PROTOCOL\_ERROR\_REJECT to TRUE;
- 1> set the IE "Protocol error cause" in the variable PROTOCOL\_ERROR\_INFORMATION to "Message extension not comprehended";

Reference

3GPP TS 25.331 clause 8.1.9.3a, 8.1.9.4, 9.3b.

8.1.6.1.3 Test purpose

To confirm that the UE transmits an RRC STATUS message on the DCCH using AM RLC if it receives a DOWNLINK DIRECT TRANSFER message with a non comprehended critical extension. To confirm that the UE transmits an RRC STATUS message on the DCCH using AM RLC if it receives a DOWNLINK DIRECT TRANSFER message which includes an invalid IE "CN domain identity".

8.1.6.1.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CELL\_DCH (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE is in the CELL\_DCH state. The SS transmits an invalid DOWNLINK DIRECT TRANSFER message to the UE. The UE shall transmit an RRC STATUS message on the DCCH using AM RLC. The error type "Message extension not comprehended" shall be indicated in IE "Protocol error cause". The SS transmits a DOWNLINK DIRECT TRANSFER message that contains an invalid IE "CN domain identity" to the UE. The UE shall transmit an RRC STATUS message on the DCCH using AM RLC. The error type "Message not compatible with receiver state" shall be indicated in IE "Protocol error cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	DOWNLINK DIRECT TRANSFER	See specific message content
2		→	RRC STATUS	
3		←	DOWNLINK DIRECT TRANSFER	Sent from a new CN domain.
4		→	RRC STATUS	

Specific Message Contents

DOWNLINK DIRECT TRANSFER (Step 1)

Use the same message content as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Critical extensions	'01'H

RRC STATUS (Step 2)

Message content is the same as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Identification of received message type - Received message type - RRC transaction identifier	DOWNLINK DIRECT TRANSFER Same value in the DOWNLINK DIRECT TRANSFER message in step 1.
Protocol error information - Protocol error cause	Message extension not comprehended

DOWNLINK DIRECT TRANSFER (Step 3)

Use the same message content as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
CN domain identity NAS message	CS domain or PS domain as unselected domain Arbitrary message.

## RRC STATUS (Step 4)

Message content is the same as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Identification of received message type - Received message type - RRC transaction identifier	DOWNLINK DIRECT TRANSFER Same value in the DOWNLINK DIRECT TRANSFER message in step 3.
Protocol error information - Protocol error cause	Message not compatible with receiver state

### 8.1.6.1.5 Test requirement

After step 1 the UE shall transmit an RRC STATUS message on the DCCH using AM RLC setting "Message extension not comprehended" in IE "Protocol error cause" and "DOWNLINK DIRECT TRANSFER" in IE "Received message type".

After step 3 the UE shall transmit a n RRC STATUS message on the DCCH using AM RLC setting "Message not compatible with receiver state" in IE "Protocol error cause" and "DOWNLINK DIRECT TRANSFER" in IE "Received message type".

### 8.1.6.2 Direct Transfer in CELL FACH state (invalid message reception and no signalling connection exists)

#### 8.1.6.2.1 Definition

#### 8.1.6.2.2 Conformance requirement

If the UE receives a DOWNLINK DIRECT TRANSFER message, and the signalling connection identified with the IE "CN domain identity" does not exist according to the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS, the UE shall:

- 1> ignore the content of the DOWNLINK DIRECT TRANSFER message;
- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to DOWNLINK DIRECT TRANSFER; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the DOWNLINK DIRECT TRANSFER message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state".

...

If the UE receives a DOWNLINK DIRECT TRANSFER message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to DOWNLINK DIRECT TRANSFER; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the DOWNLINK DIRECT TRANSFER message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;

- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION.

When the RRC STATUS message has been submitted to lower layers for transmission, the UE shall:

- 1> continue with any ongoing processes and procedures as if the DOWNLINK DIRECT TRANSFER message has not been received.

...

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, containing an undefined critical message extension, the UE shall:

- 1> set the variable PROTOCOL\_ERROR\_REJECT to TRUE;
- 1> set the IE "Protocol error cause" in the variable PROTOCOL\_ERROR\_INFORMATION to "Message extension not comprehended";

## Reference

3GPP TS 25.331 clause 8.1.9.3a, 8.1.9.4, 9.3b.

### 8.1.6.2.3 Test purpose

To confirm that the UE transmits an RRC STATUS message on the DCCH using AM RLC if it receives a DOWNLINK DIRECT TRANSFER message which does not include any IEs except IE "Message Type". To confirm that the UE transmits an RRC STATUS message on the DCCH using AM RLC if it receives a DOWNLINK DIRECT TRANSFER message which includes an invalid IE "CN domain identity".

### 8.1.6.2.4 Method of test

## Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH\_FACH (state 6-6) or PS\_DCCH\_FACH (state 6-8) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

## Test Procedure

The UE is in the CELL\_FACH state. The SS transmits an invalid DOWNLINK DIRECT TRANSFER message to the UE. The UE shall transmit an RRC STATUS message on the DCCH using AM RLC. The error type "Message extension not comprehended" shall be indicated in IE "Protocol error cause". The SS transmits a DOWNLINK DIRECT TRANSFER message that contains an invalid IE "CN domain identity" to the UE. The UE shall transmit an RRC STATUS message on the DCCH using AM RLC. The error type "Message not compatible with receiver state" shall be indicated in IE "Protocol error cause".

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	DOWNLINK DIRECT TRANSFER	See specific message content
2		→	RRC STATUS	
3		←	DOWNLINK DIRECT TRANSFER	Sent from a new CN domain.
4		→	RRC STATUS	

## Specific Message Contents

### DOWNLINK DIRECT TRANSFER (Step 1)

Use the same message content as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Critical extensions	'01'H

## RRC STATUS (Step 2)

Message content is the same as found in Clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Identification of received message type - Received message type - RRC transaction identifier	DOWNLINK DIRECT TRANSFER Same value in the DOWNLINK DIRECT TRANSFER message in step 1.
Protocol error information - Protocol error cause	Message extension not comprehended

## DOWNLINK DIRECT TRANSFER (Step 3)

Use the same message content as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
CN domain identity NAS message	CS domain or PS domain as unselected domain Arbitrary message.

## RRC STATUS (Step 4)

Message content is the same as found in Clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Identification of received message type - Received message type - RRC transaction identifier	DOWNLINK DIRECT TRANSFER Same value in the DOWNLINK DIRECT TRANSFER message in step 3.
Protocol error information - Protocol error cause	Message not compatible with receiver state

### 8.1.6.2.5 Test requirement

After step 1 the UE shall transmit an RRC STATUS message on the DCCH using AM RLC setting "Message extension not comprehended" in IE "Protocol error cause" and "DOWNLINK DIRECT TRANSFER" in IE "Received message type".

After step 3 the UE shall transmit a n RRC STATUS message on the DCCH using AM RLC setting "Message not compatible with receiver state" in IE "Protocol error cause" and "DOWNLINK DIRECT TRANSFER" in IE "Received message type".

### 8.1.6.3 Measurement Report on INITIAL DIRECT TRANSFER message and UPLINK DIRECT TRANSFER message

#### 8.1.6.3.1 Definition

#### 8.1.6.3.2 Conformance requirement

In CELL\_FACH state, the UE shall:

- 1> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 12 (or "System Information Block Type 11" if "System Information Block Type 12" is not being broadcast);
- 1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported.

#### Reference

3GPP TS 25.331, clause 8.1.8.2, 8.1.10.2

#### 8.1.6.3.3 Test Purpose

To confirm that the UE reports measured results on RACH messages, if it receives IE "Intra-frequency reporting quantity for RACH reporting" and IE "Maximum number of reported cells on RACH" from System Information Block Type 11 or 12 upon a transition from idle mode to CELL\_FACH state.

#### 8.1.6.3.4 Method of test

##### Initial Condition

System Simulator: 1 cell

UE: "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

##### Specific Message Content

For system information block 11 for Cell 1 (gives IE's which are different from defaults given in 34.108 sec 6.1) to be transmitted before idle update preamble.

System Information Block type 11 (Step 1) ([FDD](#))

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	5
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	0
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 1
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present
- Intra-frequency Measurement quantity	
- Filter Coefficient	0
- Measurement quantity	CPICH RSCP
- Intra-frequency measurement for RACH reporting	
- SFN-SFN observed time difference	No report
- Reporting quantity	CPICH RSCP
- Maximum number of reported cells on RACH	Current cell
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting	FALSE
indicator	
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting	TRUE
indicator	
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected set cells	Not present
- Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged mode RLC
- Periodic Reporting/Event Trigger Reporting	Event trigger
Mode	
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each event	
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	15 dB
- Cells forbidden to affect reporting range	Not Present
- W	0.0
- Hysteresis	1.0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	0
- Replacement activation threshold	Not Present
- Time to trigger	60 ms
- Amount of reporting	Infinity
- Reporting interval	16 seconds
- Reporting Cell Status	

- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Inter-frequency measurement system information	Not Present
- Traffic volume measurement system information	Not Present

[System Information Block type 11 \(Step 1\) \(TDD\)](#)

[Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:](#)



<u>Information Element</u>	<u>Value/remark</u>
<u>SIB12 indicator</u>	<u>FALSE</u>
<u>FACH measurement occasion info</u>	<u>Not Present</u>
<u>Measurement control system information</u>	
- <u>Use of HCS</u>	<u>Not used</u>
- <u>Intra-frequency measurement system information</u>	
- <u>Intra-frequency measurement identity</u>	<u>5</u>
- <u>Intra-frequency cell info list</u>	
- <u>CHOICE intra-frequency cell removal</u>	<u>Remove no intra-frequency cells</u>
- <u>New intra-frequency cells</u>	
- <u>Intra-frequency cell id</u>	<u>0</u>
- <u>Cell info</u>	
- <u>Cell individual offset</u>	<u>0 dB</u>
- <u>Reference time difference to cell</u>	<u>Not present</u>
- <u>Read SFN Indicator</u>	<u>FALSE</u>
- <u>CHOICE mode</u>	<u>TDD</u>
- <u>Primary CCPCH Info</u>	<u>Set to same as used for cell 1</u>
- <u>Primary CPICH TX power</u>	<u>Not Present</u>
- <u>TX Diversity Indicator</u>	<u>FALSE</u>
- <u>Cell selection and Re-selection info</u>	<u>Not present</u>
- <u>Intra-frequency Measurement quantity</u>	
- <u>Filter Coefficient</u>	<u>0</u>
- <u>Measurement quantity</u>	<u>PCCPCH RSCP</u>
- <u>Intra-frequency measurement for RACH reporting</u>	
- <u>SFN-SFN observed time difference</u>	<u>No report</u>
- <u>Reporting quantity</u>	<u>PCCPCH RSCP</u>
- <u>Maximum number of reported cells on RACH</u>	<u>Current cell</u>
- <u>Reporting information for state CELL_DCH</u>	
- <u>Intra-frequency reporting quantity</u>	
- <u>Reporting quantities for active set cells</u>	
- <u>Cell synchronisation information reporting indicator</u>	<u>FALSE</u>
- <u>Cell identity reporting indicator</u>	<u>FALSE</u>
- <u>PCCPCH RSCP reporting indicator</u>	<u>FALSE</u>
- <u>Pathloss reporting indicator</u>	<u>FALSE</u>
- <u>Reporting quantities for monitored set cells</u>	
- <u>Cell synchronisation information reporting indicator</u>	<u>TRUE</u>
- <u>Cell identity reporting indicator</u>	<u>FALSE</u>
- <u>PCCPCH RSCP reporting indicator</u>	<u>TRUE</u>
- <u>Pathloss reporting indicator</u>	<u>FALSE</u>
- <u>Reporting quantities for detected set cells</u>	<u>Not present</u>
- <u>Measurement Reporting Mode</u>	
- <u>Measurement Reporting Transfer Mode</u>	<u>Acknowledged mode RLC</u>
- <u>Periodic Reporting/Event Trigger Reporting Mode</u>	<u>Event trigger</u>
- <u>CHOICE report criteria</u>	<u>Intra-frequency measurement reporting criteria</u>
- <u>Parameters required for each event</u>	
- <u>Intra-frequency event identity</u>	<u>1g</u>
- <u>Reporting Range Constant</u>	<u>15 dB</u>
- <u>Cells forbidden to affect reporting range</u>	<u>Not Present</u>
- <u>W</u>	<u>0.0</u>
- <u>Hysteresis</u>	<u>1.0 dB</u>
- <u>Time to trigger</u>	<u>60 ms</u>
- <u>Amount of reporting</u>	<u>Infinity</u>
- <u>Reporting interval</u>	<u>16 seconds</u>
- <u>Reporting Cell Status</u>	
- <u>CHOICE reported cell</u>	<u>Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency</u>
- <u>Maximum number of reported cells</u>	<u>2</u>
- <u>Inter-frequency measurement system information</u>	<u>Not Present</u>
- <u>Traffic volume measurement system information</u>	<u>Not Present</u>

## Test Procedure

The UE is initially in idle mode and camps on cell 1. SS prompts the operator to make an outgoing call for one of the traffic classes supported by the UE. SS and UE shall execute outgoing call procedure. During this procedure UE transmits INITIAL DIRECT TRANSFER and UPLINK DIRECT TRANSFER messages with IE "Measured results on RACH" which is set to measured CPICH RSCP in the current cell. After that SS releases a RRC connection.

### Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in idle mode and camps onto cell 1.
2				SS prompts the test operator to make an outgoing call.
3		→	RRC CONNECTION REQUEST	
4		←	RRC CONNECTION SETUP	See default message content (Transition to CELL_FACH)
5		→	RRC CONNECTION SETUP COMPLETE	See default message content
6		→	INITIAL DIRECT TRANSFER ( SERVICE REQUEST )	See specific message content
7		←	DOWNLINK DIRECT TRANSFER( AUTHENTICATION AND CIPHERING REQUEST )	See default message content
8		→	UPLINK DIRECT TRANSFER( AUTHENTICATION AND CIPHERING RESPONSE )	See specific message content
9		←	SECURITY MODE COMMAND	See default message content
10		→	SECURITY MODE COMPLETE	See default message content
11		→	UPLINK DIRECT TRANSFER( ACTIVATE PDP CONTEXT REQUEST )	See specific message content
12		←	RRC CONNECTION RELEASE	See default message content
13		→	RRC CONNECTION RELEASE COMPLETE	See default message content

### Specific Message Content

#### RRC CONNECTION REQUEST (Step 3) [\(FDD\)](#)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Measured results on RACH <ul style="list-style-type: none"> <li>- Measurement result for current cell</li> <li>- CHOICE measurement quantity</li> <li>- CPICH RSCP</li> <li>- Measurement results for monitored cells</li> </ul>	Check to see if set to 'CPICH RSCP' Checked to see if set to within an acceptable range. Checked to see if this IE is absent.

#### [RRC CONNECTION REQUEST \(Step 3\) \(TDD\)](#)

[Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:](#)

<a href="#">Information Element</a>	<a href="#">Value/remark</a>
<a href="#">Measured results on RACH</a> <ul style="list-style-type: none"> <li>- <a href="#">Measurement result for current cell</a></li> <li>- <a href="#">CHOICE measurement quantity</a></li> <li>- <a href="#">PCCPCH RSCP</a></li> <li>- <a href="#">Measurement results for monitored cells</a></li> </ul>	<a href="#">Check to see if set to 'PCCPCH RSCP'</a> <a href="#">Checked to see if set to within an acceptable range.</a> <a href="#">Checked to see if this IE is absent.</a>

INITIAL DIRECT TRANSFER ( SERVICE REQUEST ) (Step 6) [\(FDD\)](#)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:


Information Element	Value/remark
Measured results on RACH - Measurement result for current cell - CHOICE measurement quantity - CPICH RSCP - Measurement results for monitored cells	Check to see if set to 'CPICH RSCP' Checked to see if set to within an acceptable range. Checked to see if this IE is absent.

[INITIAL DIRECT TRANSFER \( SERVICE REQUEST \) \(Step 6\) \(TDD\)](#)

[Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:](#)

<a href="#">Information Element</a>	<a href="#">Value/remark</a>
<a href="#">Measured results on RACH</a> <a href="#">- Measurement result for current cell</a> <a href="#">- CHOICE measurement quantity</a> <a href="#">- PCCPCH RSCP</a> <a href="#">- Measurement results for monitored cells</a>	<a href="#">Check to see if set to 'PCCPCH RSCP'</a> <a href="#">Checked to see if set to within an acceptable range.</a> <a href="#">Checked to see if this IE is absent.</a>

UPLINK DIRECT TRANSFER( AUTHENTICATION AND CIPHERING RESPONSE ) (Step 8) [\(FDD\)](#)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:


Information Element	Value/remark
Measured results on RACH - Measurement result for current cell - CHOICE measurement quantity - CPICH RSCP - Measurement results for monitored cells	Check to see if set to 'CPICH RSCP' Checked to see if set to within an acceptable range. Checked to see if this IE is absent.

[UPLINK DIRECT TRANSFER\( AUTHENTICATION AND CIPHERING RESPONSE \) \(Step 8\) \(TDD\)](#)

[Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:](#)

<a href="#">Information Element</a>	<a href="#">Value/remark</a>
<a href="#">Measured results on RACH</a> <a href="#">- Measurement result for current cell</a> <a href="#">- CHOICE measurement quantity</a> <a href="#">- PCCPCH RSCP</a> <a href="#">- Measurement results for monitored cells</a>	<a href="#">Check to see if set to 'PCCPCH RSCP'</a> <a href="#">Checked to see if set to within an acceptable range.</a> <a href="#">Checked to see if this IE is absent.</a>

UPLINK DIRECT TRANSFER( ACTIVATE PDP CONTEXT REQUEST ) (Step 11) [\(FDD\)](#)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:


Information Element	Value/remark
Measured results on RACH - Measurement result for current cell - CHOICE measurement quantity - CPICH RSCP - Measurement results for monitored cells	Check to see if set to 'CPICH RSCP' Checked to see if set to within an acceptable range. Checked to see if this IE is absent.

#### UPLINK DIRECT TRANSFER( ACTIVATE PDP CONTEXT REQUEST ) (Step 11) (TDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
<u>Measured results on RACH</u> <u>- Measurement result for current cell</u> <u>- CHOICE measurement quantity</u> <u>- PCCPCH RSCP</u> <u>- Measurement results for monitored cells</u>	<u>Check to see if set to 'PCCPCH RSCP'</u> <u>Checked to see if set to within an acceptable range.</u> <u>Checked to see if this IE is absent.</u>

#### 8.1.6.3.5 Test Requirement

After step 2 the UE shall transmit a RRC CONNECTION REQUEST message which includes IE "measured results on RACH", containing the measurement value for cell 1's CPICH RSCP ([FDD mode](#)) or [PCCPCH RSCP \(TDD mode\)](#).

After step 5 the UE shall transmit a INITIAL DIRECT TRANSFER ( SERVICE REQUEST) message which includes IE "measured results on RACH", containing the measurement value for cell 1's CPICH RSCP.

After step 7 the UE shall transmit a UPLINK DIRECT TRANSFER( AUTHENTICATION AND CIPHERING RESPONSE ) message which includes IE "measured results on RACH", containing the measurement value for cell 1's CPICH RSCP ([FDD mode](#)) or [PCCPCH RSCP \(TDD mode\)](#).

After step 10 the UE shall transmit a UPLINK DIRECT TRANSFER( ACTIVATE PDP CONTEXT REQUEST ) message which includes IE "measured results on RACH", containing the measurement value for cell 1's CPICH RSCP ([FDD mode](#)) or [PCCPCH RSCP \(TDD mode\)](#).

#### 8.1.6.4 UPLINK Direct Transfer (RLC re-establishment)

##### 8.1.6.4.1 Definition

##### 8.1.6.4.2 Conformance requirement

If signalling radio bearer RB n (where n equals to 3 or 4) was used when transmitting the UPLINK DIRECT TRANSFER message and a re-establishment of RLC on same signalling radio bearer RB n occurs before the successful delivery of the UPLINK DIRECT TRANSFER message has been confirmed by RLC, the UE shall:

- 1> retransmit the UPLINK DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3.

#### Reference

3GPP TS 25.331 clause 8.1.8.2a.

##### 8.1.6.4.3 Test purpose

To confirm that the UE transmits a second UPLINK DIRECT TRANSFER message after the re-establishment of RLC on RB3 which occurs before the successful delivery of the first UPLINK DIRECT TRANSFER message.

#### 8.1.6.4.4 Method of test

##### Initial Condition

System Simulator: 1 cell – Cell 1 is active.

UE: PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108.

##### Specific Message Contents

For RRC CONNECTION SETUP message to be transmitted in the initial setup, use the default message given in TS 34.108 subclause 9 with the following exceptions:.

## RRC CONNECTION SETUP

Information Element	Value/Remarks
Signalling RB information to setup	(AM DCCH for NAS_DT High priority)
- RB identity	Not Present
- CHOICE RLC info type	
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	1
- Polling info	
- Timer_poll_prohibit	1000
- Timer_poll	1000
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	5
- Logical channel identity	3
- CHOICE RLC size list	Configured
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit List
- RLC size index	According to TS34.108 clause 6.10.2.4.1.3 for <a href="#">FDD, 6.10.3.4.1.3 for TDD 3.84 Mcps option or 6.11.5.4.1.3 for TDD 1.28 Mcps option</a> (standalone 13.6 kbps signalling radio bearer)
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3

### Test Procedure

UE is in CELL\_DCH. SS set the RLC entity for SRB3 to stop. SS requests operator to deactivate the established PDP context. Then the UE shall transmit an UPLINK DIRECT TRANSFER message on

the uplink DCCH. SS does not acknowledge the AM PDUs carrying UPLINK DIRECT TRANSFER message. The SS then sends a UTRAN MOBILITY INFORMATION message on SRB1 requesting the UE to do a SRNS relocation, 5s after asking the operator to deactivate the established PDP context. The UE shall send a UTRAN MOBILITY INFORMATION CONFIRM message on SRB2. The SS set the RLC entity for SRB3 to continue upon receiving UTRAN MOBILITY INFORMATION CONFIRM message. Then UE shall retransmit an UPLINK DIRECT TRANSFER message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS set the RLC entity for SRB3 to stop. SS requests operator to make an outgoing cal.
2		→	UPLINK DIRECT TRANSFER	.
3		←	UTRAN MOBILITY INFORMATION	
4		→	UTRAN MOBILITY INFORMATION CONFIRM	UE sends this message on uplink DCCH on AM RLC. After the reception, SS configures RB 3 to continue.
5		→	UPLINK DIRECT TRANSFER	DEEACTIVATE PDP CONTEXT REQUEST message is embedded in UPLINK DIRECT TRANSFER message.

Specific Message Contents

UTRAN MOBILITY INFORMATION (Step 3)

Use the same message sub-type found in [9] TS 34.108 clause 9 with the following exception:





#### 8.1.6.4.5 Test requirement

After step 3, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message using uplink DCCH on AM RLC and then retransmit UPLINK DIRECT TRANSFER message on the uplink DCCH.

## CHANGE REQUEST

⌘ **34.123-1 CR 611** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections and updates on 8.2.1 Radio Bearer control procedure, Radio Bearer Establishment for TDD mode
<b>Source:</b>	⌘ Siemens AG
<b>Work item code:</b>	⌘ TEI <b>Date:</b> ⌘ 24/10/2003
<b>Category:</b>	⌘ <b>F</b> <b>Release:</b> ⌘ Rel-5
	<i>Use one of the following categories:</i>
	<b>F</b> (correction)
	<b>A</b> (corresponds to a correction in an earlier release)
	<b>B</b> (addition of feature),
	<b>C</b> (functional modification of feature)
	<b>D</b> (editorial modification)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .
	<i>Use one of the following releases:</i>
	<b>2</b> (GSM Phase 2)
	<b>R96</b> (Release 1996)
	<b>R97</b> (Release 1997)
	<b>R98</b> (Release 1998)
	<b>R99</b> (Release 1999)
	<b>Rel-4</b> (Release 4)
	<b>Rel-5</b> (Release 5)
	<b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ Some corrections and updates are needed to apply RRC, TDD mode
<b>Summary of change:</b>	⌘ In tests 8.2.1.3, 8.2.1.14, References to clause 9 of TS 34.108 included instead of Annex A
	⌘ 8.2.1 <u>Radio Bearer Establishment</u>
	⌘ 8.2.1.9, Deletion of redundant table RADIO BEARER SETUP (Step 3)
	⌘ 8.2.1.11.4, inclusion of CHOICE mode in RADIO BEARER SETUP (FDD)
	⌘ editorial mistake in RADIO BEARER SETUP (for Step 2)
	⌘ 8.2.1.18, RADIO BEARER SETUP (Step 1) and RADIO BEARER SETUP (Step 2) updated for TDD
	⌘ 8.2.1.23, conformance requirement updated for TDD.
	⌘ RADIO BEARER SETUP (Step 3) for FDD and TDD, CHOICE mode included
	⌘ 8.2.1.24 conformance requirement updated for TDD.
	⌘ RADIO BEARER SETUP (Step 3) for FDD and TDD, CHOICE mode included
<b>Consequences if not approved:</b>	⌘ TDD option could not be tested properly

<b>Clauses affected:</b>	⌘ 8.2.1
--------------------------	---------

<b>Other specs affected:</b>		<b>Y</b>	<b>N</b>	
	⌘			Other core specifications ⌘
				Test specifications
				O&M Specifications
<b>Other comments:</b> ⌘ Revision of T1-031422, including CR number				

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 8.2 Radio Bearer control procedure

### 8.2.1 Radio Bearer Establishment

#### 8.2.1.1 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_DCH: Success

##### 8.2.1.1.1 Definition

##### 8.2.1.1.2 Conformance requirement

If the UE receives:

- a RADIO BEARER SETUP message; or

it shall:

- 1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:
  - 2> perform the physical layer synchronisation procedure A as specified in TS 25.214 (FDD only);
- 1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

- 1> enter a state according to TS 25.331 subclause 8.6.3.3.

If the UE was in CELL\_DCH state upon reception of the reconfiguration message and remains in CELL\_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> if the IE "Downlink information for each radio link" is absent, not change its current DL Physical channel configuration.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1bis> in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):
  - 2> set the IE "Uplink Timing Advance" according to subclause 8.6.6.26. In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:
    - 1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

#### Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

##### 8.2.1.1.3 Test purpose

To confirm that the UE establishes a new radio bearer according to a RADIO BEARER SETUP message.

#### 8.2.1.1.4 Method of test

##### Initial Condition

System Simulator: 1 cell

UE: CS-DCCH\_DCH (state 6-5) or PS\_DCCH\_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

##### Test Procedure

The UE is in CELL\_DCH state, after the test operator is prompted to make an out-going call. Before step 1, only signalling radio bearers have been established. The SS transmits a RADIO BEARER SETUP message to the UE. This message requests the establishment of radio access bearer. After the UE receives this message, it configures them and establishes a radio access bearer. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

##### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
2		→	RADIO BEARER SETUP COMPLETE	
3	↔		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

##### Specific Message Contents

##### RADIO BEARER SETUP

The contents of RADIO BEARER SETUP message in this test case is identical to the message sub-type indicated by "Non speech from CELL\_DCH to CELL\_DCH in CS" or "Speech from CELL\_DCH to CELL\_DCH in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" in [9] TS 34.108 clause 9.

#### 8.2.1.1.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

#### 8.2.1.2 Void

#### 8.2.1.3 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_DCH: Failure (Unsupported configuration)

##### 8.2.1.3.1 Definition

##### 8.2.1.3.2 Conformance requirement

If the UTRAN instructs the UE to use a configuration, which it does not support and/or if the received message causes the variable UNSUPPORTED\_CONFIGURATION to be set to TRUE, the UE shall:

- 1> transmit a failure response as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "configuration unsupported".
- 1> set the variable UNSUPPORTED\_CONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The UE shall:

1> in case of reception of a RADIO BEARER SETUP message:

...

2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

...

The UE should set the variable UNSUPPORTED\_CONFIGURATION to TRUE if the received message is not according to the UE capabilities.

Reference

3GPP TS 25.331 clause 8.2.2.6, 8.2.2.9, 8.5.20.

8.2.1.3.3 Test purpose

To confirm that the UE keeps its configuration and transmits a RADIO BEARER SETUP FAILURE message in case of receiving a RADIO BEARER SETUP message which includes parameters of its unsupported configuration.

8.2.1.3.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH\_DCH (state 6-5) or PS\_DCCH\_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the domain(s) supported by the UE.

Test Procedure

The UE is in CELL\_DCH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER SETUP message in which the frequency cannot be supported by the UE. After the UE receives this message, it transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC. UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b	→		MEASUREMENT REPORT	
1		←	RADIO BEARER SETUP	Including the unsupported configuration for the UE.
2	→		RADIO BEARER SETUP FAILURE	The UE does not change the configuration.
3	→		MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

#### MEASUREMENT REPORT (Step 0b and 3)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions:

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

#### RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is indicated as "Non-speech in CS" ~~as found in Annex A~~ or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108 with the following exceptions:

## RADIO BEARER SETUP (FDD)

Information Element	Value/remark
Frequency info CHOICE mode - UARFCN uplink (Nu) - UARFCN downlink (Nd)	FDD 0 950

## RADIO BEARER SETUP (TDD)

Information Element	Value/remark
Frequency info CHOICE mode - UARFCN (Nt)	TDD 0

## RADIO BEARER SETUP FAILURE (Step 2)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Message Type Failure cause	Not checked

### 8.2.1.3.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.  
After step 1 the UE transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC .

After step 2, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

### 8.2.1.4 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_DCH: Failure (Physical channel Failure and successful reversion to old configuration)

#### 8.2.1.4.1 Definition

#### 8.2.1.4.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset. If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel establishment failure".

NOTE: The criteria defined in this subclause only apply in case the UE performs synchronisation procedure A (FDD only).

...

If the received message caused the UE to be in CELL\_DCH state and the UE according to subclause 8.5.4 failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

1> revert to the configuration prior to the reception of the message (old configuration);

...

1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and



- 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 2> clear that entry;
- 2> set the IE "failure cause" to "physical channel failure".
- 1> set the variable ORDERED\_RECONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The UE shall:

- 1> in case of reception of a RADIO BEARER SETUP message:

...

- 2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

#### Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.5.4.

#### 8.2.1.4.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, if the UE fails to reconfigure the radio bearer according to the RADIO BEARER SETUP message before timer T312 expires.

#### 8.2.1.4.4 Method of test

#### Initial Condition

System Simulator: 2 cells. – Cell 1 is active and cell 2 is inactive.

UE: CS-DCCH\_DCH (state 6-5) or PS-DCCH\_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the domain(s) supported by the UE.

#### Test Procedure

**Table 8.2.1.4**

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84 MHz	-60	-60	OFF	-75
P-CCPCH RSCP (TDD)	dBm	-60	-60	OFF	-75

Table 8.2.1.4 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL\_DCH state in cell 1. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. Then the SS configures its downlink transmission power settings according to column "T1" in table 8.2.1.4. The SS transmits a RADIO BEARER SETUP message to the UE specifying a configuration in cell 2 and SS keeps its old dedicated channel configuration in cell 1. Then after T312 expiry, the UE reverts to the old configuration and transmits a RADIO BEARER SETUP FAILURE message on the DCCH in cell 1

using AM RLC which is set to "physical channel failure" in IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER SETUP	The SS keeps its old L1 configuration in cell 1 and does not configure a physical channel in cell 2 after transmitting this message.
2				The UE does not configure the new radio access bearer and reverts to the old configuration.
3		→	RADIO BEARER SETUP FAILURE	UE shall transmit this message using the old configuration.
4		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC Periodical Reporting
- Measurement Report Transfer Mode	
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 4)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions:

Information Element	Value/Remarks
Measurement identity	1
Measured Results	Traffic volume measured results list
- CHOICE measurement	
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

#### RADIO BEARER SETUP (Step 1) (FDD)

The contents of the RADIO BEARER SETUP message in this test case is indicated as "Non speech to CELL\_DCH from CELL\_DCH in CS", "Speech to CELL\_DCH from CELL\_DCH in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in clause 9 of TS 34.108, with the following exceptions.

Information Element	Value/remark
Downlink information for each radio link list	
- Downlink information for each radio links	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary CPICH scrambling code	Ref. to the Default setting for cell 2 in TS34.108 clause 6.1 (FDD)

#### RADIO BEARER SETUP (Step 1) (TDD)

The contents of the RADIO BEARER SETUP message in this test case is indicated as "Non speech to CELL\_DCH from CELL\_DCH in CS", "Speech to CELL\_DCH from CELL\_DCH in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Downlink information for each radio link list	
- Downlink information for each radio links	
- CHOICE mode	TDD
- Primary CCPCH info	Ref. to the Default setting for cell 2 in TS34.108 clause 6.1 (TDD)

#### RADIO BEARER SETUP FAILURE (Step 3)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

#### 8.2.1.4.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.  
After step 2 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

After step 3, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

8.2.1.5 Void

8.2.1.6 Void

8.2.1.7 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_DCH: Failure (Invalid message reception and Invalid configuration)

8.2.1.7.1 Definition

8.2.1.7.2 Conformance requirement

If the received reconfiguration message contains a protocol error causing the variable `PROTOCOL_ERROR_REJECT` to be set to `TRUE` according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Rejected transactions" in the variable `TRANSACTIONS`; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to the cause value "protocol error";
  - 2> include the IE "Protocol error information" with contents set to the value of the variable `PROTOCOL_ERROR_INFORMATION`.

....

If the variable `INVALID_CONFIGURATION` is set to `TRUE` the UE shall:

- 1> keep the configuration existing before the reception of the message;
- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
    - 3> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable `TRANSACTIONS`; and
    - 3> clear that entry.
  - 2> set the IE "failure cause" to "invalid configuration".
- 1> set the variable `INVALID_CONFIGURATION` to `FALSE`;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

....

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, containing an undefined critical message extension, the UE shall:

- 1> set the variable `PROTOCOL_ERROR_REJECT` to `TRUE`;
- 1> set the IE "Protocol error cause" in the variable `PROTOCOL_ERROR_INFORMATION` to "Message extension not comprehended";

- 1> if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:
- 2> store the IE "Message type" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 2> set the IE "RRC transaction identifier" to zero in that table entry.
- 1> perform procedure specific error handling according to TS 25.331 clause 8.

....

If the IE "RAB information for setup" is included, the procedure is used to establish radio bearers belonging to a radio access bearer, and the UE shall:

- 1> if several IEs "RAB information for setup" are included and the included IEs "CN domain identity" in the IE "RAB info" does not all have the same value:
- 2> set the variable INVALID\_CONFIGURATION to TRUE.

....

The UE shall:

- 1> in case of reception of a RADIO BEARER SETUP message:

...

- 2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

## Reference

3GPP TS 25.331 clause 8.2.2.13, 8.2.2.11, 8.2.2.9, 8.6.4.2 and 9.3b.

### 8.2.1.7.3 Test purpose

To confirm that the UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC if it receives an invalid RADIO BEARER SETUP message which contains an unexpected critical message extension.

To confirm that the UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC if it receives a RADIO BEARER SETUP message including an invalid configuration.

### 8.2.1.7.4 Method of test

## Initial Condition

System Simulator: 1 cell

UE: CS-DCCH\_DCH (state 6-5) or PS-DCCH\_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

## Test Procedure

The UE is in CELL\_DCH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits an invalid RADIO BEARER SETUP message to the UE which contains an unexpected critical message extension. The UE keeps the old configuration and transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "protocol error" in IE "failure cause", and is set to "Message extension not comprehended" in IE "Protocol error cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically. The UE keeps current configuration after SS transmits a RADIO BEARER SETUP message including an invalid configuration. Then UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER SETUP	See specific message content.
2		→	RADIO BEARER SETUP FAILURE	The UE does not change its configuration.
2a		→	MEASUREMENT REPORT	
3		←	RADIO BEARER SETUP	This message includes an invalid value.
4		→	RADIO BEARER SETUP FAILURE	The UE does not change its configuration.
5		→	MEASUREMENT REPORT	

### Specific Message Contents

#### MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

## MEASUREMENT REPORT (Step 0b, 2a and 5)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions:

Information Element	Value/Remarks
Measurement identity	1
Measured Results	Traffic volume measured results list
- CHOICE measurement	
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

## RADIO BEARER SETUP (Step 1)

Use the RADIO BEARER SETUP message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Critical extensions	'01'H

## RADIO BEARER SETUP FAILURE (Step 2)

Information Element	Value/remark
Message Type	
Failure cause	Protocol error
- Failure cause	
- Protocol error information	
- Protocol error cause	Message extension not comprehended
Other information element	Not checked

## RADIO BEARER SETUP (Step 3)

The contents of RADIO BEARER SETUP message in this test case is identical as "Non speech from CELL\_DCH to CELL\_DCH in CS", Speech to CELL\_DCH from CELL\_DCH in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in clause 9 of TS 34.108 with the following exceptions:

## RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RAB information for setup list	
- RAB information for setup	This IE is set as defined in message "RADIO BEARER SETUP message: AM or UM (Speech in CS)"
- RAB information for setup	This IE is set as defined in message "RADIO BEARER SETUP message: AM or UM (Packet to CELL_DCH from CELL_DCH in PS)"

## RADIO BEARER SETUP FAILURE (Step 4)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

### 8.2.1.7.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.  
After step 1 the UE shall keep its old configuration and transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "protocol error" in IE "failure cause" and set to "Message extension not comprehended" in IE "Protocol error cause".  
After step 2, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.  
After step 3 the UE shall keep its old configuration and transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".  
After step 4, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

### 8.2.1.8 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_FACH: Success

#### 8.2.1.8.1 Definition

#### 8.2.1.8.2 Conformance requirement

If the UE receives:

- a RADIO BEARER SETUP message; or

it shall:

- 1> perform the physical layer synchronisation procedure as specified in TS 25.214 (FDD only);
- 1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

- 1> enter a state according to TS 25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL\_FACH state, the UE shall, after the state transition:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to TS 25.304 on that frequency.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to TS 25.304.
- 1> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
  - 2> initiate a cell update procedure according to TS 25.331 subclause 8.3.1 using the cause "Cell reselection";
  - 2> when the cell update procedure completed successfully:
    - 3> if the UE is in CELL\_PCH or URA\_PCH state:



4> initiate a cell update procedure according to TS 25.331 subclause 8.3.1 using the cause "Uplink data transmission";

4> proceed as below.

1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;

1> select PRACH according to TS 25.331 subclause 8.5.17;

1> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;

1> use the transport format set given in system information;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> ignore that IE and stop using DRX.

1> if the contents of the variable C\_RNTI is empty:

2> perform a cell update procedure according to TS 25.331 subclause 8.3.1 using the cause "Cell reselection";

2> when the cell update procedure completed successfully:

3> if the UE is in CELL\_PCH or URA\_PCH state:

4> initiate a cell update procedure according to TS 25.331 subclause 8.3.1 using the cause "Uplink data transmission";

4> proceed as below.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

## Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

8.2.1.8.3 Test purpose

To confirm that the UE establishes a new radio bearer according to a RADIO BEARER SETUP message.

8.2.1.8.4 Method of test

## Initial Condition

System Simulator: 1 cell.

NOTE: The 'timer poll' value in the SS RLC transmit entity should be set to 800 ms.

UE: PS-DCCH\_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

## Test Procedure

The UE is in CELL\_DCH state, after the test operator is asked to initiate a packet-switched data call. The SS transmits a RADIO BEARER SETUP message to the UE. After the UE receives this message, it transits from CELL\_DCH to CELL\_FACH state. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. Then the UE and the SS enters the communicating state. SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	SS requests test operator to make an outgoing packet-switched data call.
2		→	RADIO BEARER SETUP COMPLETE	The UE selects PRACH and S-CCPCH indicated in SIB5 or SIB6 after entering CELL_FACH state.
3		↔	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

### Specific Message Contents

For RADIO BEARER SETUP message in step 1, use the message sub-type indicated as "Packet to CELL\_FACH from CELL\_DCH in PS" found in [9] TS 34.108 clause 9 with the following exception:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B

#### 8.2.1.8.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

#### 8.2.1.9 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_FACH: Success (Cell re-selection)

##### 8.2.1.9.1 Definition

##### 8.2.1.9.2 Conformance requirement

1. If after state transition the UE enters CELL\_FACH state, the UE shall, after the state transition:
  - .....
  - if the contents of the variable C\_RNTI is empty:
    - perform a cell update procedure according to clause 8.3.1 using the cause "Cell reselection";
2. If the CELL UPDATE CONFIRM message
  - does not include "RB information elements"; and
  - does not include "Transport channel information elements"; and
  - does not include "Physical channel information elements"; and
  - includes "CN information elements"; or
  - includes the IE "Ciphering mode info"; or
  - includes the IE "Integrity protection mode info"; or
  - includes the IE "New C-RNTI"; or

- includes the IE "New U-RNTI":

the UE shall:

- transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.
3. In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:
- transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC;

## Reference

3GPP TS 25.331 clause 8.2.2.3, 8.3.1.7, 8.2.2.4.

### 8.2.1.9.3 Test purpose

1. To verify that the UE when receiving a RADIO BEARER SETUP message not including a value for C-RNTI initiate a cell update procedure and indicating the cause "Cell reselection".
2. To verify that the UE when the CELL UPDATE CONFIRM message does not include "RB information elements", "Transport channel information elements" nor "Physical channel information elements" but include the IE "New C-RNTI" transmit a UTRAN MOBILITY INFORMATION CONFIRM message.
3. To confirm that the UE transmits RADIO BEARER SETUP COMPLETE message after it completes the cell update procedure.

### 8.2.1.9.4 Method of test

#### Initial Condition

System Simulator: 1 cell- Cell 1 is active.

NOTE: The 'timer poll' value in the SS RLC transmit entity should be set to 800 ms.

UE: PS-DCCH\_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

#### Test Procedure

The UE is in CELL\_DCH state. The SS transmits a RADIO BEARER SETUP message which includes IE "Primary CPICH info" and no dedicated physical channel information, to request the UE to transit from CELL\_DCH to CELL\_FACH. Due to absence of the C-RNTI in the RADIO BEARER SETUP message the UE shall initiate the cell update procedure even if the UE selects the same cell as indicated by the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD). The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit a CELL UPDATE CONFIRM message on downlink DCCH after receiving CELL UPDATE message. The UE transmits a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC. The UE transmits a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC. SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	
3		←	RADIO BEARER SETUP	Assigned the transition from CELL_DCH to CELL_FACH
4		→	CELL UPDATE	The value "cell reselection" set in IE "Cell update cause".
5		←	CELL UPDATE CONFIRM	C-RNTI included
6		→	UTRAN MOBILITY INFORMATION CONFIRM	
7		→	RADIO BEARER SETUP COMPLETE	
8		↔	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

~~RADIO BEARER SETUP (Step 3) (FDD)~~

The contents of RADIO BEARER SETUP message in this test case is identical as "Packet to CELL\_FACH from CELL\_DCH in PS" as found in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/Remarks
New C-RNTI	Not present

~~RADIO BEARER SETUP (Step 3) (TDD)~~

~~The contents of RADIO BEARER SETUP message in this test case is identical as "Packet to CELL\_FACH from CELL\_DCH in PS" as found in [9] TS 34.108 clause 9 with the following exceptions:~~

Information Element	Value/remark
<del>New C-RNTI</del>	<del>Not present</del>

CELL UPDATE (Step 4)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"cell reselection"

CELL UPDATE CONFIRM (Step 5)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in [9] TS 34.108 clause 9. with the following exceptions:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B

UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

The contents of UTRAN MOBILITY INFORMATION CONFIRM message is identical as "UTRAN MOBILITY INFORMATION CONFIRM message" as found in [9] TS 34.108 clause 9.

RADIO BEARER SETUP COMPLETE (Step 7)

The contents of RADIO BEARER SETUP COMPLETE message is identical as "RADIO BEARER SETUP COMPLETE message" as found in [9] TS 34.108 clause 9.

#### 8.2.1.9.5 Test requirement

1. After step 3 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "cell reselection".
2. After step 5 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC.
3. After step 6 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

#### 8.2.1.10 Radio Bearer Establishment for transition from CELL\_FACH to CELL\_DCH: Success

##### 8.2.1.10.1 Definition

##### 8.2.1.10.2 Conformance requirement

If the UE receives:

- a RADIO BEARER SETUP message; or

it shall:

- 1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:
  - 2> perform the physical layer synchronisation procedure A as specified in TS 25.214 (FDD only);
- 1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

- 1> enter a state according to TS 25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL\_DCH state, the UE shall, after the state transition:

- 1> remove any C-RNTI from MAC;
- 1> clear the variable C\_RNTI.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

- 1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

#### Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

##### 8.2.1.10.3 Test purpose

To confirm that the UE establishes a new radio bearer according to a RADIO BEARER SETUP message.

#### 8.2.1.10.4 Method of test

##### Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH\_FACH (state 6-8) as specified in clause 7.4 of TS 34.108.

##### Test Procedure

The UE is in CELL\_FACH state, after SS prompts the test operator to initiate a packet-switched data call. The SS transmits a RADIO BEARER SETUP message to the UE . After the UE receives this message, it configures them and establishes the required radio bearers. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

##### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
2		→	RADIO BEARER SETUP COMPLETE	
3		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

##### Specific Message Contents

##### RADIO BEARER SETUP

The contents of RADIO BEARER SETUP message in this test case is identical the message sub-type indicated by "Packet to CELL\_DCH from CELL\_FACH in PS" in [9] TS 34.108 clause 9.

#### 8.2.1.10.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

#### 8.2.1.11 Radio Bearer Establishment for transition from CELL\_FACH to CELL\_DCH: Failure (Unsupported configuration)

##### 8.2.1.11.1 Definition

##### 8.2.1.11.2 Conformance requirement

If the UTRAN instructs the UE to use a configuration, which it does not support and/or if the received message causes the variable UNSUPPORTED\_CONFIGURATION to be set to TRUE, the UE shall:

- 1> transmit a failure response as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "configuration unsupported".
- 1> set the variable UNSUPPORTED\_CONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The UE shall:

1> in case of reception of a RADIO BEARER SETUP message:

...

2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

...

The UE should set the variable UNSUPPORTED\_CONFIGURATION to TRUE if the received message is not according to the UE capabilities.

#### Reference

3GPP TS 25.331 clause 8.2.2.6, 8.2.2.9, 8.5.20.

8.2.1.11.3 Test purpose

To confirm that the UE keeps its configuration and transmits a RADIO BEARER SETUP FAILURE message in case of it receiving a RADIO BEARER SETUP message, which includes parameters of an unsupported configuration.

8.2.1.11.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH\_FACH (state 6-8) as specified in clause 7.4 of TS 34.108.

#### Test Procedure

The UE is in CELL\_FACH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER SETUP message with a stated frequency that cannot be supported by the UE. After the UE receives this message, it shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC. UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

#### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER SETUP	This message includes an unsupported configuration for the UE.
2		→	RADIO BEARER SETUP FAILURE	The UE shall transmit this message using RLC-AM mode and do not change the current configuration.
3		→	MEASUREMENT REPORT	

#### Specific Message Contents

##### MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

#### MEASUREMENT REPORT (Step 0b and 3)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions:

Information Element	Value/Remarks
Measurement identity	1
Measured Results	Traffic volume measured results list
- CHOICE measurement	
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

#### RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is indicated as "Packet to CELL\_DCH from CELL\_FACH in PS" as found in [9] TS 34.108 Clause 9 with the following exceptions:



## RADIO BEARER SETUP (FDD)

Information Element	Value/remark
Frequency info	
- CHOICE mode	FDD
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

## RADIO BEARER SETUP (TDD)

Information Element	Value/remark
Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	0

## RADIO BEARER SETUP FAILURE (Step 2)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in [9] TS 34.108 Clause 9, with the following exceptions:

Information Element	Value/remark
Message Type	
Failure cause	Not checked

### 8.2.1.11.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.  
After step 1 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM .

After step 2, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

### 8.2.1.12 Radio Bearer Establishment for transition from CELL\_FACH to CELL\_DCH: Failure (Physical channel Failure and successful reversion to old configuration)

#### 8.2.1.12.1 Definition

#### 8.2.1.12.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset. If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel establishment failure".

....

If the received message caused the UE to be in CELL\_DCH state and the UE failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

- 1> revert to the configuration prior to the reception of the message (old configuration);

...

- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:

- 2> include the IE "RRC transaction identifier"; and

- 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

- 2> clear that entry;
- 2> set the IE "failure cause" to "physical channel failure".
- 1> set the variable ORDERED\_RECONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

....

The UE shall:

- 1> in case of reception of a RADIO BEARER SETUP message:

...

- 2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.5.4.

8.2.1.12.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a RADIO BEARER SETUP FAILURE message when the UE fails to configure the new radio bearer after it detects physical channel failure, followed by the T312 expiry.

8.2.1.12.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH\_FACH (state 6-8) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL\_FACH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER SETUP message to the UE and keeps its old physical channel configuration. After T312 expiry, the UE shall perform cell reselection procedure and detect the same serving cell only. Then the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC. The content of the message shall indicate "physical channel failure" in IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER SETUP	The SS keep its old configuration.
2		→	RADIO BEARER SETUP FAILURE	The UE does not configure a new radio bearer and reverts to the old configuration.
3		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

### MEASUREMENT REPORT (Step 0b and 3)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions:

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

### RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is identical to the message sub-type indicated by "Packet to CELL\_DCH from CELL\_FACH in PS" clause 9 of TS 34.108.

### RADIO BEARER SETUP FAILURE (Step 2)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

#### 8.2.1.12.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.  
After step 1 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".  
After step 2, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

#### 8.2.1.13 Radio Bearer Establishment for transition from CELL\_FACH to CELL\_DCH: Failure (Physical channel Failure and cell reselection)

##### 8.2.1.13.1 Definition

##### 8.2.1.13.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset. If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel establishment failure".

....

If the received message caused the UE to be in CELL\_DCH state and the UE failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

1> revert to the configuration prior to the reception of the message (old configuration);

...

1> if the old configuration does not include dedicated physical channels (CELL\_FACH state):

2> select a suitable UTRA cell according to TS 25.304;

2> if the UE selects another cell than the cell the UE camped on upon reception of the reconfiguration message:

3> initiate a cell update procedure according to TS 25.331 subclause 8.3.1, using the cause "Cell reselection";

3> after the cell update procedure has completed successfully:

4> proceed as below.

1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "failure cause" to "physical channel failure".

1> set the variable ORDERED\_RECONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

....

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI":

the UE shall:

- 1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

....

The UE shall:

- 1> in case of reception of a RADIO BEARER SETUP message:

...

- 2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.3.1.7, 8.5.4.

8.2.1.13.3 Test purpose

To confirm that the UE transmit a RADIO BEARER SETUP FAILURE message after it completes a cell update for the physical channel failure in the radio bearer establishment procedure.

8.2.1.13.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active.

UE: PS-DCCH\_FACH (state 6-8) as specified in clause 7.4 of TS 34.108 in cell 1.

Test Procedure

**Table 8.2.1.13**

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84 MHz	-60	-75	-75	-60
P-CCPICH RSCP (TDD)	dBm	-60	-75	-75	-60

Table 8.2.1.13 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies reverse of the transmission power settings for cell 1 and cell 2.

The UE is in CELL\_FACH state in cell 1. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER

SETUP message to the UE. After transmitting the RADIO BEARER SETUP message, the SS shall not configure its DL dedicated physical channel in accordance with the setting in the message and release its current configuration. At the same time, the SS configures its downlink transmission power settings according to columns "T1" in table 8.2.1.13. The UE recognize that it cannot synchronize with the SS on the new radio bearer. The UE performs cell re-selection and transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" which is set to "cell reselection". The SS shall transmit a CELL UPDATE CONFIRM message on downlink DCCH after receiving a CELL UPDATE message. The UE transmits a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and subsequently transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" to IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

#### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER SETUP	
2				The SS does not configure the new radio bearer in accordance with the settings in the message and applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.1.13.
3			Void	
4				The UE select the cell 2.
5		→	CELL UPDATE	The value "cell reselection" shall be set in IE "Cell update cause".
6		←	CELL UPDATE CONFIRM	This message include IE "new U-RNTI" and IE "new C-RNTI".
7		→	UTRAN MOBILITY INFORMATION CONFIRM	
8		→	RADIO BEARER SETUP FAILURE	The IE "failure cause" shall be set to "physical channel failure"
9		→	MEASUREMENT REPORT	

#### Specific Message Contents

##### MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

#### MEASUREMENT REPORT (Step 0b and 9)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions:

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

#### RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is identical to the message sub-type "Packet to CELL\_DCH from CELL\_FACH in PS" found in clause 9 of TS 34.108.

#### CELL UPDATE (Step 5)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"cell reselection"

## CELL UPDATE CONFIRM (Step 6)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM" message as found in clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 5
New U-RNTI	
- SRNC Identity	'0000 0000 0000 0001'
- S-RNTI	Different from previous S-RNTI
New C-RNTI	Different from previous C-RNTI

## RADIO BEARER SETUP FAILURE (Step 8)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Message Type	"RADIO BEARER RECONFIGURATION FAILURE"
Failure cause	"physical channel failure"

### 8.2.1.13.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

After step 4 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "cell reselection".

After step 6 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 7 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".

After step 8, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

### 8.2.1.14 Radio Bearer Establishment for transition from CELL\_FACH to CELL\_DCH: Failure (Incompatible simultaneous reconfiguration)

#### 8.2.1.14.1 Definition

#### 8.2.1.14.2 Conformance requirement

If the received message is any of the messages:

- RADIO BEARER SETUP; or

...

the UE shall:

- 2> if the variable ORDERED\_RECONFIGURATION is set to TRUE; or

...

- 3> if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the same "Message Type" as the received message in the table "Accepted transactions" in the variable TRANSACTIONS:

...

- 3> else:

- 4> reject the transaction; and

- 4> if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:



- 5> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

...

If the table "Rejected transactions" in the variable TRANSACTIONS is set due to the received message and the variable PROTOCOL\_ERROR\_REJECT is set to FALSE, the UE shall:

- 1> not apply the configuration contained in the received reconfiguration message;
- 1> transmit a failure response message as specified in subclause TS 25.331 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Rejected transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "incompatible simultaneous reconfiguration".
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The UE shall:

- 1> in case of reception of a RADIO BEARER SETUP message:

...

- 2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.9, 8.2.2.12, clause 8.6.3.11.

8.2.1.14.3 Test purpose

To confirm that if the UE receives a RADIO BEARER SETUP message during a reconfiguring procedure due to a radio bearer message other than RADIO BEARER SETUP, it shall keep its configuration as if the RADIO BEARER SETUP message had not been received and complete the reconfiguration procedure according to the previously received message.

8.2.1.14.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH\_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL\_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE. The SS transmits a RADIO BEARER SETUP message before the "activation time" indicated in the RADIO BEARER RECONFIGURATION message expires. When the UE receives the RADIO BEARER SETUP message, the UE shall keep its current configuration as if it had not received the RADIO BEARER SETUP message and shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration". After the SS acknowledges the RADIO BEARER SETUP FAILURE message, the UE reconfigures the new physical channel parameters upon the specified activation time and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2		←	RADIO BEARER SETUP	
3		→	RADIO BEARER SETUP FAILURE	The UE does not change the configuration because of the RADIO BEARER SETUP message, and transmit this message on its uplink DCCH using the same RLC-AM mode radio bearer before step 1.
4		→	RADIO BEARER RECONFIGURATION COMPLETE	This message is on DCCH using AM RLC.
5		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical as "Packet to CELL\_DCH from CELL\_FACH in PS" as found in [Annex A clause 9 of TS 34.108](#) with the following exceptions:

Information Element	Value/remark
Activation Time	Not present
Uplink DPCH Info - Scrambling code number	1

RADIO BEARER RECONFIGURATION (Step 1) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical as "Packet to CELL\_DCH from CELL\_FACH in PS" as found in [Annex A clause 9 of TS 34.108](#) with the following exceptions:

Information Element	Value/remark
Activation Time	Not present
Uplink DPCH timeslots and codes - First timeslot code list	Assigned in step 1

RADIO BEARER SETUP (for Step 2) (FDD)

For this message, use the message sub-type entitled "Packet to CELL\_DCH from CELL\_FACH in PS" in the default message content. Information element(s) to be changed are listed below:

Information Element	Value/remark
Activation Time	Not present
Uplink DPCH Info - Scrambling code number	2

RADIO BEARER SETUP (for Step 2) (TDD)

For this message, use the message sub-type entitled "Packet to CELL\_DCH from CELL\_FACH in PS" in the default message content. Information element(s) to be changed are listed below:

Information Element	Value/remark
Activation Time	Not Present
Uplink DPCH timeslots and codes - First timeslot code list	A different code combination <del>to</del> than used in step 1.

## RADIO BEARER SETUP FAILURE

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in [Annex A clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
Message Type Failure cause	Incompatible simultaneous reconfiguration

### 8.2.1.14.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 3 the UE shall configure the new configuration on the activation time and transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

### 8.2.1.15 Void

### 8.2.1.16 Radio Bearer Establishment for transition from CELL\_FACH to CELL\_FACH: Success

#### 8.2.1.16.1 Definition

#### 8.2.1.16.2 Conformance requirement

If the UE receives:

- a RADIO BEARER SETUP message; or

it shall:

- 1> perform the physical layer synchronisation procedure as specified in TS 25.214;
- 1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

- 1> enter a state according to TS 25.331 subclause 8.6.3.3.

If the UE was in CELL\_FACH state upon reception of the reconfiguration message and remains in CELL\_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to TS 25.304 on that frequency;
  - 2> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

...

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

8.2.1.16.3 Test purpose

To confirm that the UE establishes a new radio access bearer according to a RADIO BEARER SETUP message.

8.2.1.16.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH\_FACH (state 6-8) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL\_FACH state, after the test operator is being prompted to make an outgoing packet-switched call. The SS transmits a RADIO BEARER SETUP message to the UE. After the UE receives this message, it configures them and establishes a new radio access bearer. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC. SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	
2		→	RADIO BEARER SETUP COMPLETE	The UE select PRACH and S-CCPCH using SIB5 or SIB6.
3		↔	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

None.

8.2.1.16.5 Test requirement

After step 1, the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

8.2.1.17 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_DCH: success (Subsequently received)

8.2.1.17.1 Definition

8.2.1.17.2 Conformance requirement

If the IE "RRC transaction identifier" is included in a received message, the UE shall perform the actions below. The UE shall:

If the received message is any of the messages:

- RADIO BEARER SETUP; or

...

the UE shall:

2> if the variable ORDERED\_RECONFIGURATION is set to TRUE; or

2> if the variable CELL\_UPDATE\_STARTED is set to TRUE; or

- 2> if the table "Accepted transactions" in the variable TRANSACTIONS contains an entry with an IE "Message Type" set to ACTIVE SET UPDATE; or
- 2> if the received message contains a protocol error according to TS 25.331 clause 9 causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE:
  - 3> if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the same "Message Type" as the received message in the table "Accepted transactions" in the variable TRANSACTIONS:
    - 4> ignore the transaction; and
    - 4> continue with any ongoing processes and procedures as the message was not received;
    - 4> and end the procedure.
  - 3> else:
    - ...

## Reference

3GPP TS 25.331 clause 8.6.3.11.

### 8.2.1.17.3 Test purpose

To confirm that if the UE receives a new RADIO BEARER SETUP message before the UE completes the configuration of the radio bearer according to a previous RADIO BEARER SETUP message, it ignores the new RADIO BEARER SETUP message and configures according to the previous RADIO BEARER SETUP message received.

### 8.2.1.17.4 Method of test

## Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH\_DCH (state 6-5) or PS-DCCH\_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

## Test Procedure

The UE is in CELL\_DCH state. SS transmits a RADIO BEARER SETUP message to the UE before the UE completes the configuration of the radio bearer according to the RADIO BEARER SETUP message prior to this new message. The UE ignores the new RADIO BEARER SETUP message and configures according to the former RADIO BEARER SETUP message. On completion of radio bearer configuration, the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	Scrambling code number is set to "1" for FDD mode.
2		←	RADIO BEARER SETUP	SS send this message before the expiry of activation time specified in RADIO BEARER SETUP message of step 1. For FDD the IE "Scrambling code number" is set to "2" and for TDD mode a different code combination to that used in step 11 is used.
3		→	RADIO BEARER SETUP COMPLETE	The UE ignores the RADIO BEARER SETUP message in step 2 and completes configuration according to the RADIO BEARER SETUP message in step 1.
4		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 1) (FDD)

For RADIO BEARER SETUP in step 1, use the message sub-type indicated as "Non speech to CELL\_DCH from CELL\_DCH in CS" or "Speech to CELL\_DCH from CELL\_DCH in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in clause 9 of TS 34.108, with the exception of the following Information Elements:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8 ]]MOD 256
- Uplink DPCH Info	
- Scrambling code number	1

RADIO BEARER SETUP (Step 1) (TDD)

For RADIO BEARER SETUP in step 1, use the message sub-type indicated as "Non speech in CS" as found in clause 9 of TS 34.108, with the exception of the following Information Elements:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8 ]]MOD 256
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned in step 1

RADIO BEARER SETUP (Step 2) (FDD)

For RADIO BEARER SETUP in step 2, use the message sub-type indicated as "Non speech to CELL\_DCH from CELL\_DCH in CS" or "Speech to CELL\_DCH from CELL\_DCH in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in clause 9 of TS 34.108, with the exception of the following:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH Info	
- Scrambling code number	2

## RADIO BEARER SETUP (Step 2) (TDD)

For RADIO BEARER SETUP in step 2, use the message sub-type indicated as "Non speech in CS" as found in clause 9 of TS 34.108, with the exception of the following:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH timeslots and codes - First timeslot code list	A different code combination to that used in step 1.

### 8.2.1.17.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

### 8.2.1.18 Radio Bearer Establishment for transition from CELL\_FACH to CELL\_DCH: Success (Subsequently received)

#### 8.2.1.18.1 Definition

#### 8.2.1.18.2 Conformance requirement

If the IE "RRC transaction identifier" is included in a received message, the UE shall perform the actions below. The UE shall:

If the received message is any of the messages:

- RADIO BEARER SETUP; or

...

the UE shall:

- 2> if the variable ORDERED\_RECONFIGURATION is set to TRUE; or
- 2> if the variable CELL\_UPDATE\_STARTED is set to TRUE; or
- 2> if the table "Accepted transactions" in the variable TRANSACTIONS contains an entry with an IE "Message Type" set to ACTIVE SET UPDATE; or
- 2> if the received message contains a protocol error according to TS 25.331 clause 9 causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE:
  - 3> if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the same "Message Type" as the received message in the table "Accepted transactions" in the variable TRANSACTIONS:
    - 4> ignore the transaction; and
    - 4> continue with any ongoing processes and procedures as the message was not received;
    - 4> and end the procedure.
  - 3> else:

#### Reference

3GPP TS 25.331 clause 8.6.3.11.

#### 8.2.1.18.3 Test purpose

To confirm that if the UE receives a new RADIO BEARER SETUP message before the UE completes the configuration of the radio bearer according to a previous RADIO BEARER SETUP message, it ignores the new RADIO BEARER SETUP message and configures according to the previous RADIO BEARER SETUP message received.

## 8.2.1.18.4 Method of test

### Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH\_FACH (state 6-8) as specified in clause 7.4 of TS 34.108.

### Test Procedure

The UE is in CELL\_FACH state. The SS transmits a RADIO BEARER SETUP message, requesting the UE to setup radio bearers using DPCH physical channels. SS transmits another RADIO BEARER SETUP message before the activation time specified in the first message has lapsed. The UE ignores the new RADIO BEARER SETUP message and configures the radio bearers according to the former RADIO BEARER SETUP message. On completion of radio bearer configuration, the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	Scrambling code number is set to "1" for FDD mode.
2		←	RADIO BEARER SETUP	For FDD mode the IE "Scrambling code number" is set to "2" and for TDD mode a different code combination to that used in step 1 is used.
3		→	RADIO BEARER SETUP COMPLETE	The UE ignores the RADIO BEARER SETUP message in step 2 and confirms configuration according to the RADIO BEARER SETUP message in step 1.
4		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

### Specific Message Contents

#### RADIO BEARER SETUP (Step 1) (FDD)

For this message, use the message sub-type entitled "Packet to CELL\_DCH from CELL\_FACH in PS" in [9] TS 34.108 clause 9.

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not present
- Uplink DPCH Info	
- Scrambling code number	1

#### RADIO BEARER SETUP (Step 1) (TDD)

~~For RADIO BEARER SETUP in step 1~~ For this message, use the message sub-type indicated as "Packet to CELL\_DCH from CELL\_FACH in PS ~~Non-speech in CS~~" as found in clause 9 of TS 34.108, with the exception of the following Information Elements:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not present
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned in step 1



## RADIO BEARER SETUP (for Step 2) (FDD)

For this message, use the message sub-type entitled "Packet to CELL\_DCH from CELL\_FACH in PS" in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH Info	
- Scrambling code number	2

## RADIO BEARER SETUP (Step 2) (TDD)

For this message ~~For RADIO BEARER SETUP in step 2~~, use the message sub-type indicated as "Packet to CELL\_DCH from CELL\_FACH in PS ~~Non-speech in CS~~" as found in clause 9 of TS 34.108, with the exception of the following:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH timeslots and codes	
- First timeslot code list	A different code combination to that used in step 1.

### 8.2.1.18.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC specified in step 1.

After step 3 the UE shall communicate with the SS on the radio bearer specified in the RADIO BEARER SETUP message in step 1.

8.2.1.19 Void

8.2.1.20 Void

8.2.1.21 Void

8.2.1.22 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_FACH (Frequency band modification): Success

8.2.1.22.1 Definition

8.2.1.22.2 Conformance requirement

If the UE receives:

-a RADIO BEARER SETUP message;

it shall:

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

1> enter a state according to TS25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL\_FACH state, the UE shall, after the state transition:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to TS5.304 on that frequency.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to TS5.304.

- 1> if the received reconfiguration message included the IE "Primary CPICH info", and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (FDD only):
  - 2> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "Cell reselection";
  - 2> when the cell update procedure completed successfully:
    - 3> if the UE is in CELL\_PCH or URA\_PCH state:
      - 4> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "Uplink data transmission";
      - 4> proceed as below.
- 1> select PRACH according to TS25.331 subclause 8.5.17;
- 1> select Secondary CCPCH according to TS25.331 subclause 8.5.19;
- 1> use the transport format set given in system information;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
  - 2> ignore that IE and stop using DRX.
- 1> if the contents of the variable C\_RNTI is empty:
  - 2> perform a cell update procedure according to TS 25.331 subclause 8.3.1 using the cause "Cell reselection";
  - 2> when the cell update procedure completed successfully:
    - 3> if the UE is in CELL\_PCH or URA\_PCH state:
      - 4> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "Uplink data transmission";
      - 4> proceed as below.

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

- 1> transmit a RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC, using the new configuration after the state transition.
- 1> the procedure ends.

## Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

### 8.2.1.22.3 Test purpose

1. To confirm that the UE transits from CELL\_DCH to CELL\_FACH according to the RADIO BEARER SETUP message.
2. To confirm that the UE transmits RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC on a common physical channel in a different frequency.

### 8.2.1.22.4 Method of test

#### Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.

UE: "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

## Test Procedure

**Table 8.2.1.22**

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/3.84 MHz	-55	-72	Off	-55
P-CCPCH RSCP (TDD)	dBm	-55	-72	Off	-55

Table 8.2.1.22 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 6.

The UE is in idle mode state of cell 1 and the SS configures its downlink transmission power setting according to columns "T0" in table 8.2.1.22. The SS and UE execute procedure P5. Next The SS and the UE execute procedure P9. The SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER SETUP message with no IE "Frequency info" to the UE. After the UE receives this message, it transits from CELL\_DCH in cell 1 to CELL\_FACH state in cell 6, and initiates CELL UPDATE procedure with IE "Cell update cause" set to "cell reselection". Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC in cell 6. The SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1a	↔		SS executes procedure P5 (clause 7.4.2.2.2) specified in TS 34.108.	
1b	↔		SS executes procedure) P9 (clause 7.4.2.4.2) specified in TS 34.108.	
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.1.22.
3			Void	
4	←		RADIO BEARER SETUP	Not including frequency information.
5		→	CELL UPDATE	The IE "Cell update cause" is set to "cell reselection".
6	←		CELL UPDATE CONFIRM	Including the IE "New C-RNTI"
7		→	UTRAN MOBILITY INFORMATION CONFIRM	
8		→	RADIO BEARER SETUP COMPLETE	The UE sends this message on a common physical channel in cell 6.
9	↔		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

### Specific Message Contents

#### RADIO BEARER SETUP (Step 4)

Use the message sub-type indicated as "Packet to CELL\_FACH from CELL\_DCH in PS" found in [9] TS 34.108 clause 9 with the following exception:

Information Element	Value/remark
Frequency info	Not Present
Downlink information for each radio link	Not Present

#### CELL UPDATE (Step 5)

The contents of CELL UPDATE message are identical as "Contents of CELL UPDATE message" as found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"cell reselection"

#### CELL UPDATE CONFIRM (Step 6)

The contents of CELL UPDATE CONFIRM message are identical as "CELL UPDATE CONFIRM message" as found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B

#### UTRAN MOBILITY UPDATE CONFIRM (Step 7)

The contents of UTRAN MOBILITY UPDATE CONFIRM message are identical as "UTRAN MOBILITY UPDATE CONFIRM message" as found in [9] TS 34.108 clause 9.

##### 8.2.1.22.5 Test requirement

After step 4 the UE shall transmit a CELL UPDATE message on the CCCH in cell 6.

After step 6 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC in cell 6.

After step 7 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC in cell 6.

After step 8 the UE shall be in CELL\_FACH state of cell 6.

##### 8.2.1.23 Radio Bearer Establishment for transition from CELL\_FACH to CELL\_DCH (Frequency band modification): Success

###### 8.2.1.23.1 Definition

###### 8.2.1.23.2 Conformance requirement

If the UE receives:

-a RADIO BEARER SETUP message;

it shall:

1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in TS25.214 [\(for FDD only\)](#);

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

1> enter a state according to TS25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL\_DCH state, the UE shall, after the state transition:

1> remove any C-RNTI from MAC;

1> clear the C\_RNTI.

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

- 1> transmit a RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC, using the new configuration after the state transition.
- 1> the procedure ends.

#### Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

#### 8.2.1.23.3 Test purpose

1. To confirm that the UE transits from CELL\_FACH to CELL\_DCH according to the RADIO BEARER SETUP message.
2. To confirm that the UE transmits RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC on a dedicated physical channel in a different frequency.

#### 8.2.1.23.4 Method of test

#### Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.

UE: CS-DCCH\_FACH (state 6-6) or PS\_DCCH\_FACH (state 6-8) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

#### Test Procedure

**Table 8.2.1.23**

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/3.84 MHz	-55	-55	Off	-55
P-CCPCH RSCP (TDD)	dBm	-55	-55	Off	-55

Table 8.2.1.23 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL\_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.1.23. The SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER SETUP message including new frequency information to the UE. After the UE receives this message, it configures them and establishes the required radio access bearers and moves into cell 6. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. The SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of UE is in CELL_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.1.23.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.1.23.
3		←	RADIO BEARER SETUP	Including new frequency information.
4		→	RADIO BEARER SETUP COMPLETE	The UE sends this message in cell 6.
5		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 3) (FDD)

The contents of RADIO BEARER SETUP message in this test case is identical the message sub-type indicated by "Packet to CELL\_DCH from CELL\_FACH in PS" or "Non speech from CELL\_FACH to CELL\_DCH in CS" or "Speech from CELL\_FACH to CELL\_DCH in CS" in [9] TS 34.108 clause 9 , with the following exception:

Information Element	Value/remark
Frequency info - CHOICE mode - UARFCN uplink(Nu) - UARFCN downlink(Nd)	<u>FDD</u> Same uplink UARFCN as used for cell 6 Same downlink UARFCN as used for cell 6
Downlink information for each radio links - Primary CPICH info - Primary Scrambling Code	350

RADIO BEARER SETUP (Step 3) (TDD)

The contents of RADIO BEARER SETUP message in this test case is identical the message sub-type indicated by "Packet to CELL\_DCH from CELL\_FACH in PS" or "Non speech from CELL\_FACH to CELL\_DCH in CS" or "Speech from CELL\_FACH to CELL\_DCH in CS" in [9] TS 34.108 clause 9 , with the following exception:

Information Element	Value/remark
Frequency info - CHOICE mode - UARFCN (Nt)	<u>TDD</u> Same UARFCN as used for cell 6
Downlink information for each radio links - Primary CCPCH info - Cell parameters ID	As used for cell 6

8.2.1.23.5 Test requirement

After step 3 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC in cell 6.

After step 4 the UE shall be in CELL\_DCH state of cell 6.

## 8.2.1.24 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_DCH (Frequency band modification): Success

### 8.2.1.24.1 Definition

### 8.2.1.24.2 Conformance requirement

If the UE receives:

-a RADIO BEARER SETUP message;

it shall:

- 1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:
- 2> perform the physical layer synchronisation procedure A as specified in TS 25.214 (for FDD only) ~~and TS 25.224 for TDD~~;
- 1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.
- 1> enter a state according to TS25.331 subclause 8.6.3.3.

If the UE was in CELL\_DCH state upon reception of the reconfiguration message and remains in CELL\_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> if the IE "Downlink information for each radio link" is absent, not change its current DL Physical channel configuration.

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

- 1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

### Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

### 8.2.1.24.3 Test purpose

1. To confirm that the UE transits from CELL\_DCH to CELL\_DCH according to the RADIO BEARER SETUP message.
2. To confirm that the UE transmits the RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC on a dedicated physical channel in a different frequency.

### 8.2.1.24.4 Method of test

#### Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.  
CS-DCCH\_DCH (state 6-5) or PS\_DCCH\_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

**Table 8.2.1.24**

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/3.84 MHz	-55	-72	Off	-55
P-CCPCH RSCP (TDD)	dBm	-55	-72	Off	-55

Table 8.2.1.24 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL\_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.1.24. For FDD, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER SETUP message including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code which is assigned to P-CPICH of cell. For TDD, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER SETUP message including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CCPCH info" set to cell 6 parameters. The UE selects cell 6 and establish a radio access bearer after receiving this message, and then remains CELL\_DCH state. The UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC after completes configuration according to receiving RADIO BEARER SETUP message. Upon completion of the procedure, the SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.1.24.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.1.24.
3		←	RADIO BEARER SETUP	For FDD, including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6. For TDD, including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CCPCH info" set cell 6 parameters.
4				The UE select cell 6 and establish a radio access bearer.
5		→	RADIO BEARER SETUP COMPLETE	The UE sends this message on a dedicated physical channel in cell 6.
6		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.



## Specific Message Contents

### RADIO BEARER SETUP (Step 3) (FDD)

The contents of RADIO BEARER SETUP message in this test case is identical the message sub-type indicated by "Packet to CELL\_DCH from CELL\_DCH in PS" or "Speech in CS" in TS34.108 clause 9 Default Message Contents, or identical the message sub-type indicated by "Non speech in CS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info - <a href="#">CHOICE mode</a> - UARFCN uplink(Nu) - UARFCN downlink(Nd)	<a href="#">FDD</a> Same uplink UARFCN as used for cell 6 Same downlink UARFCN as used for cell 6
Downlink information for each radio links - <a href="#">CHOICE mode</a> - Primary CPICH info - Primary Scrambling Code	<a href="#">FDD</a> Set to same code as used for cell 6

### RADIO BEARER SETUP (Step 3) (TDD)

The contents of RADIO BEARER SETUP message in this test case is identical the message sub-type indicated by "Packet to CELL\_DCH from CELL\_DCH in PS" or "Speech in CS" in TS34.108 clause 9 Default Message Contents, or identical the message sub-type indicated by "Non speech in CS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info - <a href="#">CHOICE mode</a> - UARFCN (Nt)	<a href="#">TDD</a> Same UARFCN as used for cell 6
Downlink information for each radio links - <a href="#">CHOICE mode</a> - Primary CCPCH info - Cell parameters ID	<a href="#">TDD</a> As used for cell 6

#### 8.2.1.24.5 Test requirement

After step 4 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC in cell 6.

After step 5 the UE shall be in CELL\_DCH state of cell 6.

#### 8.2.1.25 Radio Bearer Establishment for transition from CELL\_FACH to CELL\_FACH (Frequency band modification): Success

##### 8.2.1.25.1 Definition

##### 8.2.1.25.2 Conformance requirement

If the UE receives:

- a RADIO BEARER SETUP message;

it shall:

- 1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.
- 1> enter a state according to TS25.331 subclause 8.6.3.3.

If the UE was in CELL\_FACH state upon reception of the reconfiguration message and remains in CELL\_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
- 2> select a suitable UTRA cell according to TS25.304 on that frequency;

2> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

3> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "cell reselection";

3> when the cell update procedure completed successfully:

4> proceed as below.

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

## Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

### 8.2.1.25.3 Test purpose

1. To confirm that the UE transits from CELL\_FACH to CELL\_FACH according to the RADIO BEARER SETUP message.
2. To confirm that the UE transmits RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC on a common physical channel in a different frequency.

### 8.2.1.25.4 Method of test

#### Initial Condition

System Simulator: 2 cells – Cell 1 is active and cell 6 is inactive.

UE: "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS".

#### Test Procedure

**Table 8.2.1.25**

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/3.84 MHz	-55	-72	Off	-55
P-CCPCH RSCP (TDD)	dBm	-55	-72	Off	-55

Table 8.2.1.25 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 6.

The UE is in CELL\_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.1.25. SS asks operator to make an outgoing call. The SS and UE execute procedure P6. Next The SS and the UE execute procedure P10. The SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER SETUP message including IE "Frequency info" set to frequency information of cell 6 and no IE "Primary CPICH info" for FDD and no IE "Primary CCPCH info" for TDD. The UE selects cell 6 and initiates

CELL UPDATE procedure with IE "Cell update cause" set to "cell reselection". The UE remains CELL\_FACH state. The UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC after completes configuration according to receiving RADIO BEARER SETUP message. Upon completion of the procedure, the SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

#### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.1.25. SS requests operator to make an outgoing call.
2	←→		SS executes procedure P6 (clause 7.4.2.2.2) specified in TS 34.108.	
3	←→		SS executes procedure P10 (clause 7.4.2.4.2) specified in TS 34.108.	
4				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.1.25.
5	←		RADIO BEARER SETUP	Including IE "Frequency info" set to frequency information of cell 6 and no IE "Primary CPICH info" for FDD and no IE "Primary CCPCH info" for TDD.
6	→		CELL UPDATE	The IE "Cell update cause" is set to "cell reselection".
7	←		CELL UPDATE CONFIRM	Including the IE "New C-RNTI"
8	→		UTRAN MOBILITY INFORMATION CONFIRM	
9	→		RADIO BEARER SETUP COMPLETE	The UE sends this message on a common physical channel in cell 6.
10	←→		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

#### Specific Message Contents

##### CELL UPDATE (Step 6)

The contents of CELL UPDATE message are identical as "Contents of CELL UPDATE message" as found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"cell reselection"

##### CELL UPDATE CONFIRM (Step 7)

The contents of CELL UPDATE CONFIRM message are identical as "CELL UPDATE CONFIRM message" as found in [9] TS 34.108 clause 9. with the following exceptions:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B

##### UTRAN MOBILITY UPDATE CONFIRM (Step 8)

The contents of UTRAN MOBILITY UPDATE CONFIRM message are identical as "UTRAN MOBILITY UPDATE CONFIRM message" as found in [9] TS 34.108 clause 9.

#### 8.2.1.25.5 Test requirement

After step 5 the UE shall transmit a CELL UPDATE message on the CCCH in cell 6.

After step 7 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC in cell 6.

After step 8 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC in cell 6.

After step 9 the UE shall be in CELL\_FACH state in cell 6.

#### 8.2.1.26 Radio Bearer Establishment for transition from CELL\_DCH to CELL\_DCH: Success (with ciphering on)

##### 8.2.1.26.1 Definition

##### 8.2.1.26.2 Conformance requirement

If the UE receives:

- a RADIO BEARER SETUP message; or

it shall:

- 1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:
  - 2> perform the physical layer synchronisation procedure A as specified in TS 25.214 (FDD only);
- 1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

- 1> enter a state according to TS 25.331 subclause 8.6.3.3.

If the UE was in CELL\_DCH state upon reception of the reconfiguration message and remains in CELL\_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> if the IE "Downlink information for each radio link" is absent, not change its current DL Physical channel configuration.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

- 1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

...

If the IE "RAB information for setup" is included, the procedure is used to establish radio bearers belonging to a radio access bearer, and the UE shall:

- 1> if the radio access bearer identified with the IE "RAB info" does not exist in the variable ESTABLISHED\_RABS:
  - 2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" and at least one transparent mode radio bearer is included in the IE "RB information to setup"; or
  - 2> if at least one RLC-AM or RLC-UM radio bearer is included in the IE "RB information to setup":

3> calculate the START value only once during this procedure (the same START value shall be used on all new radio bearers created for this radio access bearer) according to subclause 8.5.9 for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" part of the IE "RAB information to setup";

3> store the calculated START value in the variable START\_VALUE\_TO\_TRANSMIT.

1> for each radio bearer in the IE "RB information to setup":

2> if the radio bearer identified with the IE "RB identity" does not exist in the variable ESTABLISHED\_RABS:

3> perform the actions specified in subclause 8.6.4.3;

...

If the IE "RB information to setup" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

1> use the same START value to initialise the hyper frame number components of COUNT-C variables for all the new radio bearers to setup;

1> if the IE "RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and

1> if the IE "Uplink RLC mode" and the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "TM RLC":

2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS and at least one transparent mode radio bearer is included in the IE "RB information to setup":

3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":

4> at the activation time as specified in the IE "Activation Time" in the RADIO BEARER SETUP message:

5> initialise the 20 most significant bits of the HFN component of COUNT-C common for all transparent mode RLC radio bearer to the value of the latest transmitted START for this CN domain, while not incrementing the value of the HFN component of COUNT-C at each CFN cycle; and

5> set the remaining LSB of the HFN component of COUNT-C to zero;

5> start to perform ciphering on the radio bearer in lower layers while not incrementing the HFN.

4> at the activation time as specified in the IE "Ciphering activation time for DPCH" if included in the IE "Ciphering mode info" in the command message or, if this IE is not included, as specified in the IE "COUNT-C activation time" included in the response message:

5> initialise the 20 most significant bits of the HFN component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value in the variable START\_VALUE\_TO\_TRANSMIT;

5> set the remaining LSB of the HFN component of COUNT-C to zero;

5> start incrementing the COUNT-C value common for all transparent mode radio bearers of this CN domain as normal, at each CFN value, i.e. the HFN component is no longer fixed in value but incremented at each CFN cycle.

1> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":

2> start to perform ciphering on the radio bearer in lower layers, using the value of the IE "RB identity" minus one as the value of BEARER in the ciphering algorithm.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4, 8.6.4.2, 8.6.4.3.

8.2.1.26.3 Test purpose

To confirm that the UE establishes a new radio bearer according to a RADIO BEARER SETUP message, and that ciphering is applied onto this new radio bearer

8.2.1.26.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CS-DCCH\_DCH (state 6-5) or PS\_DCCH\_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE is in CELL\_DCH state, after the test operator is prompted to make an out-going call. Before step 1, only signalling radio bearers have been established. The SS transmits a RADIO BEARER SETUP message to the UE . This message requests the establishment of radio access bearer. After the UE receives this message, it configures them and establishes a radio access bearer. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
				The UE is in CELL_DCH state.
1	←		RADIO BEARER SETUP	
2	→		RADIO BEARER SETUP COMPLETE	
3	↔		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.
4	↔		E.g. . "speech" RLC-TM PDU's	Check that the ciphering is working.

Specific Message Contents

RADIO BEARER SETUP COMPLETE (Step 2)

The contents of RADIO BEARER SETUP COMPLETE message in this test case is identical to the message sub-type indicated by "Non speech from CELL\_DCH to CELL\_DCH in CS" or "Speech from CELL\_DCH to CELL\_DCH in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
START	Current START value for applicable CN domain. The first/ leftmost bit of the bit string contains the most significant bit of the START.

8.2.1.26.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

## CHANGE REQUEST

⌘ **34.123-1 CR 612** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘	Corrections and updates on 8.2.2 Radio Bearer control procedure, Radio Bearer Reconfiguration for TDD mode
<b>Source:</b>	⌘	Siemens AG
<b>Work item code:</b>	⌘	TEI
		<b>Date:</b> ⌘ 24/10/2003
<b>Category:</b>	⌘	<b>F</b>
		<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><i>Use <u>one</u> of the following categories:</i></p> <p><b>F</b> (correction)</p> <p><b>A</b> (corresponds to a correction in an earlier release)</p> <p><b>B</b> (addition of feature),</p> <p><b>C</b> (functional modification of feature)</p> <p><b>D</b> (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a>.</p> </div> <div style="width: 45%;"> <p><i>Use <u>one</u> of the following releases:</i></p> <p><b>2</b> (GSM Phase 2)</p> <p><b>R96</b> (Release 1996)</p> <p><b>R97</b> (Release 1997)</p> <p><b>R98</b> (Release 1998)</p> <p><b>R99</b> (Release 1999)</p> <p><b>Rel-4</b> (Release 4)</p> <p><b>Rel-5</b> (Release 5)</p> <p><b>Rel-6</b> (Release 6)</p> </div> </div>

<b>Reason for change:</b>	⌘	Some corrections and updates are needed to apply RRC, TDD mode
<b>Summary of change:</b>	⌘	<p>In tests 8.2.2.1, 8.2.2.7, 8.2.2.8, 8.2.2.9, 8.2.2.10, 8.2.2.18, 8.2.2.25, 8.2.2.28, References to clause 9 of TS 34.108 included instead of Annex A</p> <p>8.2.1 <u>Radio Bearer Reconfiguration</u></p> <p>8.2.2.1, conformance requirement updated for TDD.              RADIO BEARER RECONFIGURATION for step 3 and step 6 for TDD updated</p> <p>8.2.2.2, RADIO BEARER RECONFIGURATION, CHOICE mode included.</p> <p>8.2.2.7 RADIO BEARER RECONFIGURATION (Step 1) specified for FDD and new table included for TDD</p> <p>8.2.2.8, conformance requirement updated for TDD.              RADIO BEARER RECONFIGURATION for TDD included.</p> <p>8.2.2.9, conformance requirement updated for TDD.</p> <p>8.2.2.10, conformance requirement updated for TDD.</p> <p>8.2.2.11, inclusion of CHOICE mode in RADIO BEARER RECONFIGURATION</p> <p>8.2.2.17, correction of RADIO BEARER RECONFIGURATION (Step 1)</p> <p>8.2.2.18, correction of RADIO BEARER RECONFIGURATION (Step 1)</p> <p>8.2.2.19, RADIO BEARER RECONFIGURATION, steps 1 and 2 included for TDD</p>

8.2.2.23, conformance requirement updated for TDD.  
correction of RADIO BEARER RECONFIGURATION (Step 1)

8.2.2.25, conformance requirement updated for TDD.

8.2.2.27, RADIO BEARER RECONFIGURATION, CHOICE mode included

8.2.2.28, CHOICE mode included for RADIO BEARER RECONFIGURATION (Step 5)

8.2.2.31, values corrected for TDD.  
CHOICE mode included for RADIO BEARER RECONFIGURATION (Step 5)

8.2.2.32, CHOICE mode included for RADIO BEARER RECONFIGURATION (Step 6)

8.2.2.34, RADIO BEARER RECONFIGURATION specified for FDD or TDD.  
CHOICE mode included for RADIO BEARER RECONFIGURATION (Step 6)

**Consequences if not approved:** ⌘ TDD option could not be tested properly

**Clauses affected:** ⌘ 8.2.2

	Y	N		⌘
<b>Other specs affected:</b>	<input type="checkbox"/>	<input type="checkbox"/>	Other core specifications	
	<input type="checkbox"/>	<input type="checkbox"/>	Test specifications	
	<input type="checkbox"/>	<input type="checkbox"/>	O&M Specifications	

**Other comments:** ⌘ Revision of T1-031423 including CR number

### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.



## 8.2.2 Radio Bearer Reconfiguration

### 8.2.2.1 Radio Bearer Reconfiguration from CELL\_DCH to CELL\_DCH: Success

#### 8.2.2.1.1 Definition

#### 8.2.2.1.2 Conformance requirement

If the UE receives:

- a RADIO BEARER RECONFIGURATION message; or

it shall:

- 1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:
  - 2> perform the physical layer synchronisation procedure A as specified in TS 25.214 ([FDD only](#));
- 1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

- 1> enter a state according to TS 25.331 subclause 8.6.3.3.

If the UE was in CELL\_DCH state upon reception of the reconfiguration message and remains in CELL\_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> if the IE "Downlink information for each radio link" is absent, not change its current DL Physical channel configuration.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

- 1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

#### Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

#### 8.2.2.1.3 Test purpose

To confirm that the UE reconfigures the radio bearers according to a RADIO BEARER RECONFIGURATION message, which indicates a change of UL scrambling code and change of RLC parameters.

#### 8.2.2.1.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH\_DCH (state 6-9) or PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

## Test Procedure

The UE is in CELL\_DCH state. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE, which commands a change of UL scrambling code and change of RLC parameters to be performed. The UE reconfigures the new parameter and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

The SS transmits a new RADIO BEARER RECONFIGURATION message to the UE, which commands the UE to reconfigure RLC parameters. The UE reconfigures the new parameters and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	
3		←	RADIO BEARER RECONFIGURATION	UL scrambling code is modified. RLC configuration is modified.
4		→	RADIO BEARER RECONFIGURATION COMPLETE	
5			Void	
6		←	RADIO BEARER RECONFIGURATION	RLC configuration is modified.
7			RADIO BEARER RECONFIGURATION COMPLETE	
8			Void	
9		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

### Specific Message Contents

#### RADIO BEARER RECONFIGURATION (FDD) (Step 3)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in [Annex A clause 9 of TS 34.108](#), with the following exceptions:

Information Element		Value/remark
RB information to reconfigure list		
- RB information to reconfigure		(AM DCCH for RRC)
- RB identity		2
- PDCP info		Not Present
- PDCP SN info		Not Present
- RLC info		AM RLC
- CHOICE Uplink RLC mode		AM RLC
- Transmission RLC discard		No discard
- SDU discard mode		15
- MAX_DAT		128
- Transmission window size		400
- Timer_RST		4
- Max_RST		150
- Polling info		150
- Timer_poll_prohibit		Not present
- Timer_poll		1
- Poll_PDU		TRUE
- Poll_SDU		TRUE
- Last transmission PDU poll		99
- Last retransmission PDU poll		Not Present
- Poll_Window		Not Present
- Timer_poll_periodic		AM RLC
- CHOICE Downlink RLC mode		AM RLC
- In-sequence delivery		TRUE
- Receiving window size		128
- Downlink RLC status info		200
- Timer_status_prohibit		Not present
- Timer_EPC		TRUE
- Missing PDU indicator		400
- Timer_STATUS_periodic		Not Present
- RB mapping info		Not Present
- RB stop/continue		Not Present
- RB information to reconfigure		(AM DCCH for NAS_DT High priority)
- RB identity		3
- PDCP info		Not Present
- PDCP SN info		Not Present
- RLC info		AM RLC
- CHOICE Uplink RLC mode		AM RLC
- Transmission RLC discard		No discard
- SDU discard mode		15
- MAX_DAT		128
- Transmission window size		400
- Timer_RST		4
- Max_RST		150
- Polling info		150
- Timer_poll_prohibit		Not present
- Timer_poll		1
- Poll_PDU		TRUE
- Poll_SDU		TRUE
- Last transmission PDU poll		99
- Last retransmission PDU poll		Not Present
- Poll_Window		Not Present
- Timer_poll_periodic		AM RLC
- CHOICE Downlink RLC mode		AM RLC
- In-sequence delivery		TRUE
- Receiving window size		128
- Downlink RLC status info		200
- Timer_status_prohibit		Not present
- Timer_EPC		TRUE
- Missing PDU indicator		400
- Timer_STATUS_periodic		Not Present
- RB mapping info		Not Present
- RB stop/continue		Not Present
- RB information to reconfigure		(AM DCCH for NAS_DT Low priority)
- RB identity		4
- PDCP info		Not Present
- PDCP SN info		Not Present

<ul style="list-style-type: none"> <li>- RLC info <ul style="list-style-type: none"> <li>- CHOICE Uplink RLC mode <ul style="list-style-type: none"> <li>- Transmission RLC discard <ul style="list-style-type: none"> <li>- SDU discard mode</li> <li>- MAX_DAT</li> </ul> </li> <li>- Transmission window size</li> <li>- Timer_RST</li> <li>- Max_RST</li> <li>- Polling info <ul style="list-style-type: none"> <li>- Timer_poll_prohibit</li> <li>- Timer_poll</li> <li>- Poll_PDU</li> <li>- Poll_SDU</li> <li>- Last transmission PDU poll</li> <li>- Last retransmission PDU poll</li> <li>- Poll_Window</li> <li>- Timer_poll_periodic</li> </ul> </li> </ul> </li> <li>- CHOICE Downlink RLC mode <ul style="list-style-type: none"> <li>- In-sequence delivery</li> <li>- Receiving window size</li> <li>- Downlink RLC status info <ul style="list-style-type: none"> <li>- Timer_status_prohibit</li> <li>- Timer_EPC</li> <li>- Missing PDU indicator</li> <li>- Timer_STATUS_periodic</li> </ul> </li> </ul> </li> <li>- RB mapping info</li> <li>- RB stop/continue</li> <li>- RB information to reconfigure</li> <li>- RB identity</li> <li>- PDCP info</li> <li>- PDCP SN info</li> <li>- RLC info <ul style="list-style-type: none"> <li>- CHOICE Uplink RLC mode <ul style="list-style-type: none"> <li>- Transmission RLC discard <ul style="list-style-type: none"> <li>- SDU discard mode</li> <li>- MAX_DAT</li> </ul> </li> <li>- Transmission window size</li> <li>- Timer_RST</li> <li>- Max_RST</li> <li>- Polling info <ul style="list-style-type: none"> <li>- Timer_poll_prohibit</li> <li>- Timer_poll</li> <li>- Poll_PDU</li> <li>- Poll_SDU</li> <li>- Last transmission PDU poll</li> <li>- Last retransmission PDU poll</li> <li>- Poll_Window</li> <li>- Timer_poll_periodic</li> </ul> </li> </ul> </li> <li>- CHOICE Downlink RLC mode <ul style="list-style-type: none"> <li>- In-sequence delivery</li> <li>- Receiving window size</li> <li>- Downlink RLC status info <ul style="list-style-type: none"> <li>- Timer_status_prohibit</li> <li>- Timer_EPC</li> <li>- Missing PDU indicator</li> <li>- Timer_STATUS_periodic</li> </ul> </li> </ul> </li> <li>- RB mapping info</li> <li>- RB stop/continue</li> </ul> </li> </ul> </li></ul>	A3	<ul style="list-style-type: none"> <li>AM RLC</li> <li>No discard</li> <li>15</li> <li>128</li> <li>400</li> <li>4</li> <li>150</li> <li>150</li> <li>Not present</li> <li>1</li> <li>TRUE</li> <li>TRUE</li> <li>99</li> <li>Not Present</li> <li>AM RLC</li> <li>TRUE</li> <li>128</li> <li>200</li> <li>Not Present</li> <li>TRUE</li> <li>400</li> <li>Not Present</li> <li>Not Present</li> <li>(AM DTCH)</li> <li>20</li> <li>Not Present</li> <li>Not Present</li> <li>AM RLC</li> <li>No discard</li> <li>15</li> <li>128</li> <li>400</li> <li>4</li> <li>150</li> <li>150</li> <li>Not Present</li> <li>1</li> <li>TRUE</li> <li>TRUE</li> <li>99</li> <li>Not Present</li> <li>AM RLC</li> <li>TRUE</li> <li>128</li> <li>200</li> <li>Not Present</li> <li>TRUE</li> <li>400</li> <li>Not Present</li> <li>Not Present</li> </ul>
UL Transport channel information for all transport channels		Not Present
Added or Reconfigured UL TrCH information		Not Present
CHOICE mode		Not Present
DL Transport channel information common for all transport channel		Not Present
Deleted DL TrCH information		Not Present
Added or Reconfigured DL TrCH information		Not Present
Frequency info		Not Present
Maximum allowed UL TX power		Not Present

CHOICE channel requirement - Scrambling code number		Uplink DPCH info 1
CHOICE Mode - Downlink PDSCH information		FDD Not Present
Downlink information common for all radio links Downlink information per radio link list -Downlink information for each radio link - Primary CPICH info - Primary scrambling code		Not present     Set to same code as used for cell 1

Condition	Explanation
A1	This IE need for "Non speech in CS"
A2	This IE need for "Speech in CS"
A3	This IE need for "Packet to CELL_DCH from CELL_DCH in PS"

### RADIO BEARER RECONFIGURATION (TDD) [\(Step 3\)](#)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type titled "Packet to CELL\_DCH from CELL\_DCH in PS" in [Annex A clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
<a href="#">CHOICE mode</a> Uplink DPCH timeslots and codes - First timeslot code list Downlink information common for all radio links - Downlink DPCH info common for all RL - Timing Indicator	<a href="#">TDD</a>  Assigned by SS  Maintain

### RADIO BEARER RECONFIGURATION (FDD) (Step 6)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in [Annex A clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Condition	Value/remark
<ul style="list-style-type: none"> <li>RB information to reconfigure list</li> <li>- RB information to reconfigure <ul style="list-style-type: none"> <li>- RB identity</li> <li>- PDCP info</li> <li>- PDCP SN info</li> <li>- RLC info <ul style="list-style-type: none"> <li>- CHOICE Uplink RLC mode <ul style="list-style-type: none"> <li>- Transmission RLC discard <ul style="list-style-type: none"> <li>- SDU discard mode</li> <li>- MAX_DAT</li> </ul> </li> <li>- Transmission window size</li> <li>- Timer_RST</li> <li>- Max_RST</li> <li>- Polling info <ul style="list-style-type: none"> <li>- Timer_poll_prohibit</li> <li>- Timer_poll</li> <li>- Poll_PDU</li> <li>- Poll_SDU</li> <li>- Last transmission PDU poll</li> <li>- Last retransmission PDU poll</li> <li>- Poll_Window</li> <li>- Timer_poll_periodic</li> </ul> </li> </ul> </li> <li>- CHOICE Downlink RLC mode <ul style="list-style-type: none"> <li>- In-sequence delivery</li> <li>- Receiving window size</li> <li>- Downlink RLC status info <ul style="list-style-type: none"> <li>- Timer_status_prohibit</li> <li>- Timer_EPC</li> <li>- Missing PDU indicator</li> <li>- Timer_STATUS_periodic</li> </ul> </li> </ul> </li> </ul> </li> <li>- RB mapping info</li> <li>- RB stop/continue</li> </ul> </li> <li>- RB information to reconfigure <ul style="list-style-type: none"> <li>- RB identity</li> <li>- PDCP info</li> <li>- PDCP SN info</li> <li>- RLC info <ul style="list-style-type: none"> <li>- CHOICE Uplink RLC mode <ul style="list-style-type: none"> <li>- Transmission RLC discard <ul style="list-style-type: none"> <li>- SDU discard mode</li> <li>- MAX_DAT</li> </ul> </li> <li>- Transmission window size</li> <li>- Timer_RST</li> <li>- Max_RST</li> <li>- Polling info <ul style="list-style-type: none"> <li>- Timer_poll_prohibit</li> <li>- Timer_poll</li> <li>- Poll_PDU</li> <li>- Poll_SDU</li> <li>- Last transmission PDU poll</li> <li>- Last retransmission PDU poll</li> <li>- Poll_Window</li> <li>- Timer_poll_periodic</li> </ul> </li> </ul> </li> <li>- CHOICE Downlink RLC mode <ul style="list-style-type: none"> <li>- In-sequence delivery</li> <li>- Receiving window size</li> <li>- Downlink RLC status info <ul style="list-style-type: none"> <li>- Timer_status_prohibit</li> <li>- Timer_EPC</li> <li>- Missing PDU indicator</li> <li>- Timer_STATUS_periodic</li> </ul> </li> </ul> </li> </ul> </li> <li>- RB mapping info</li> <li>- RB stop/continue</li> </ul> </li> <li>- RB information to reconfigure <ul style="list-style-type: none"> <li>- RB identity</li> <li>- PDCP info</li> <li>- PDCP SN info</li> </ul> </li> </ul>		<ul style="list-style-type: none"> <li>(AM DCCH for RRC)</li> <li>2</li> <li>Not Present</li> <li>Not Present</li> <li>AM RLC</li> <li>No discard</li> <li>15</li> <li>128</li> <li>500</li> <li>4</li> <li>200</li> <li>200</li> <li>Not present</li> <li>1</li> <li>TRUE</li> <li>TRUE</li> <li>99</li> <li>Not Present</li> <li>AM RLC</li> <li>TRUE</li> <li>128</li> <li>200</li> <li>Not present</li> <li>TRUE</li> <li>Not Present</li> <li>Not Present</li> <li>Not Present</li> <li>(AM DCCH for NAS_DT High priority)</li> <li>3</li> <li>Not Present</li> <li>Not Present</li> <li>AM RLC</li> <li>No discard</li> <li>15</li> <li>128</li> <li>500</li> <li>4</li> <li>200</li> <li>200</li> <li>Not present</li> <li>1</li> <li>TRUE</li> <li>TRUE</li> <li>99</li> <li>Not Present</li> <li>AM RLC</li> <li>TRUE</li> <li>128</li> <li>200</li> <li>Not present</li> <li>TRUE</li> <li>Not Present</li> <li>Not Present</li> <li>Not Present</li> <li>(AM DCCH for NAS_DT Low priority)</li> <li>4</li> <li>Not Present</li> <li>Not Present</li> </ul>

Information Element	Condition	Value/remark
<ul style="list-style-type: none"> <li>- RLC info <ul style="list-style-type: none"> <li>- CHOICE Uplink RLC mode <ul style="list-style-type: none"> <li>- Transmission RLC discard <ul style="list-style-type: none"> <li>- SDU discard mode</li> <li>- MAX_DAT</li> </ul> </li> <li>- Transmission window size</li> </ul> </li> <li>- Timer_RST</li> <li>- Max_RST</li> <li>- Polling info <ul style="list-style-type: none"> <li>- Timer_poll_prohibit</li> <li>- Timer_poll</li> <li>- Poll_PDU</li> <li>- Poll_SDU</li> <li>- Last transmission PDU poll</li> <li>- Last retransmission PDU poll</li> <li>- Poll_Window</li> <li>- Timer_poll_periodic</li> </ul> </li> <li>- CHOICE Downlink RLC mode <ul style="list-style-type: none"> <li>- In-sequence delivery</li> <li>- Receiving window size</li> <li>- Downlink RLC status info <ul style="list-style-type: none"> <li>- Timer_status_prohibit</li> <li>- Timer_EPC</li> <li>- Missing PDU indicator</li> <li>- Timer_STATUS_periodic</li> </ul> </li> </ul> </li> </ul> </li> <li>- RB mapping info</li> <li>- RB stop/continue</li> <li>- RB information to reconfigure</li> <li>- RB identity</li> <li>- PDCP info</li> <li>- PDCP SN info</li> <li>- RLC info <ul style="list-style-type: none"> <li>- CHOICE Uplink RLC mode <ul style="list-style-type: none"> <li>- Transmission RLC discard <ul style="list-style-type: none"> <li>- SDU discard mode</li> <li>- MAX_DAT</li> </ul> </li> <li>- Transmission window size</li> </ul> </li> <li>- Timer_RST</li> <li>- Max_RST</li> <li>- Polling info <ul style="list-style-type: none"> <li>- Timer_poll_prohibit</li> <li>- Timer_poll</li> <li>- Poll_PDU</li> <li>- Poll_SDU</li> <li>- Last transmission PDU poll</li> <li>- Last retransmission PDU poll</li> <li>- Poll_Window</li> <li>- Timer_poll_periodic</li> </ul> </li> <li>- CHOICE Downlink RLC mode <ul style="list-style-type: none"> <li>- In-sequence delivery</li> <li>- Receiving window size</li> <li>- Downlink RLC status info <ul style="list-style-type: none"> <li>- Timer_status_prohibit</li> <li>- Timer_EPC</li> <li>- Missing PDU indicator</li> <li>- Timer_STATUS_periodic</li> </ul> </li> </ul> </li> <li>- RB mapping info</li> <li>- RB stop/continue</li> </ul> </li></ul>	A3	<ul style="list-style-type: none"> <li>AM RLC</li> <li>No discard</li> <li>15</li> <li>128</li> <li>500</li> <li>4</li> <li>200</li> <li>200</li> <li>Not present</li> <li>1</li> <li>TRUE</li> <li>TRUE</li> <li>99</li> <li>Not Present</li> <li>AM RLC</li> <li>TRUE</li> <li>128</li> <li>200</li> <li>Not Present</li> <li>TRUE</li> <li>Not Present</li> <li>Not Present</li> <li>Not Present</li> <li>(AM DTCH)</li> <li>20</li> <li>Not Present</li> <li>Not Present</li> <li>AM RLC</li> <li>No discard</li> <li>15</li> <li>128</li> <li>500</li> <li>4</li> <li>200</li> <li>200</li> <li>Not Present</li> <li>1</li> <li>TRUE</li> <li>TRUE</li> <li>99</li> <li>Not Present</li> <li>AM RLC</li> <li>TRUE</li> <li>128</li> <li>200</li> <li>Not Present</li> <li>TRUE</li> <li>Not Present</li> <li>Not Present</li> <li>Not Present</li> </ul>
UL Transport channel information for all transport channels		Not Present
Added or Reconfigured UL TrCH information		Not Present
CHOICE mode		Not Present
DL Transport channel information common for all transport channel		Not Present
Deleted DL TrCH information		Not Present
Added or Reconfigured DL TrCH information		Not Present
Frequency info		Not Present

Information Element	Condition	Value/remark
Maximum allowed UL TX power		Not Present
CHOICE channel requirement		Not Present
CHOICE Mode - Downlink PDSCH information		FDD Not Present
Downlink information common for all radio links Downlink information per radio link list - Downlink information for each radio link - Primary CPICH info - Primary scrambling code		Not Present     Set to same code as used for cell 1

Condition	Explanation
A1	This IE need for "Non speech in CS"
A2	This IE need for "Speech in CS"
A3	This IE need for "Packet to CELL_DCH from CELL_DCH in PS"

#### RADIO BEARER RECONFIGURATION (TDD) (Step 6)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in clause 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>CHOICE mode</u> <u>Uplink DPCH timeslots and codes</u> - <u>First timeslot code list</u> <u>Downlink information common for all radio links</u> <u>Downlink information per radio link list</u> - <u>Downlink information for each radio link</u> - <u>Primary CCPCH info</u>	<u>TDD</u>  <u>Assigned by SS</u> <u>Not Present</u>  <u>Set to same as used for cell 1</u>

#### 8.2.2.1.5 Test requirement

After step 3 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the new DPCH after the specified activation time has expired.

After step 6, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

#### 8.2.2.2 Radio Bearer Reconfiguration from CELL\_DCH to CELL\_DCH: Failure (Unsupported configuration)

##### 8.2.2.2.1 Definition

##### 8.2.2.2.2 Conformance requirement

If the UTRAN instructs the UE to use a configuration, which it does not support and/or if the received message causes the variable UNSUPPORTED\_CONFIGURATION to be set to TRUE, the UE shall:

- 1> transmit a failure response as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "configuration unsupported".
- 1> set the variable UNSUPPORTED\_CONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.



...  
The UE shall:

1> in case of reception of a RADIO BEARER RECONFIGURATION message:

...

2> transmit a RADIO BEARER RECONFIGURATION FAILURE as response message on the DCCH using AM RLC.

...

The UE should set the variable UNSUPPORTED\_CONFIGURATION to TRUE if the received message is not according to the UE capabilities.

#### Reference

3GPP TS 25.331 clause 8.2.2.6, 8.2.2.9, 8.5.20.

#### 8.2.2.2.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC if the received RADIO BEARER RECONFIGURATION message includes unsupported configuration parameters.

#### 8.2.2.2.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH\_DCH (state 6-9) or PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

#### Test Procedure

The UE is in CELL\_DCH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE, which includes unsupported configuration parameters for the UE. The UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC. UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

#### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER RECONFIGURATION	Including unsupported configuration by the UE
2		→	RADIO BEARER RECONFIGURATION FAILURE	The UE does not change the radio bearer.
3		→	MEASUREMENT REPORT	

#### Specific Message Contents

##### MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC Periodical Reporting
- Measurement Report Transfer Mode	
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

### MEASUREMENT REPORT (Step 0b and 3)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions:

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

### RADIO BEARER RECONFIGURATION (FDD) (Step 1)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
Frequency info	
- CHOICE mode	FDD
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

## RADIO BEARER RECONFIGURATION (TDD) (Step 1)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "[Speech in CS](#)" or "[Non speech in CS](#)" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
Frequency info <a href="#">- CHOICE mode</a> - UARFCN (Nt)	<a href="#">TDD</a> 0

## RADIO BEARER RECONFIGURATION FAILURE (Step 2)

The contents of RADIO BEARER RECONFIGURATION FAILURE message in this test case is the same as the RADIO BEARER RECONFIGURATION FAILURE message as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Message Type Failure cause	Not checked

### 8.2.2.2.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.  
After step 1 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC .  
After step 2, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

### 8.2.2.3 Void

### 8.2.2.4 Radio Bearer Reconfiguration from CELL\_DCH to CELL\_DCH: Failure (Physical channel failure and cell reselection)

#### 8.2.2.4.1 Definition

#### 8.2.2.4.2 Conformance requirement

If the received message caused the UE to be in CELL\_DCH state and the UE failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

- 1> revert to the configuration prior to the reception of the message (old configuration);
- 1> if the old configuration includes dedicated physical channels (CELL\_DCH state) and the UE is unable to revert to the old configuration:
  - 2> initiate a cell update procedure according to TS 25.331 subclause 8.3.1, using the cause "radio link failure";
  - 2> after the cell update procedure has completed successfully:
    - 3> proceed as below.
    - ...
- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "failure cause" to "physical channel failure".

1> set the variable ORDERED\_RECONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

...

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- includes "Physical channel information elements":

the UE shall:

- 1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

...

The UE shall:

- 1> in case of reception of a RADIO BEARER RECONFIGURATION message:

...

- 2> transmit a RADIO BEARER RECONFIGURATION FAILURE as response message on the DCCH using AM RLC.

#### Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.3.1.7.

#### 8.2.2.4.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message after it completes a cell update procedure when the UE cannot reconfigure the new radio bearer and a subsequent failure to revert to the old configuration.

#### 8.2.2.4.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH\_DCH (state 6-9) or PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

#### Test Procedure

The UE is in CELL\_DCH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER RECONFIGURATION message, which includes the new radio bearer parameters, to the UE. After the reception of the acknowledgement for the RADIO BEARER RECONFIGURATION message in SS, the SS shall not reconfigure dedicated physical channel in accordance with the settings in the message and release the previous configuration. The UE discovers that it cannot reconfigure the new radio bearer and wants to revert to the old configuration, but the UE cannot revert to the old configuration. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit a CELL UPDATE CONFIRM message on downlink DCCH after receiving a CELL UPDATE message. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" to IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER RECONFIGURATION	
2				The SS does not reconfigure the dedicated physical channel in accordance with the RADIO BEARER RECONFIGURATION message and shall release the old configuration.
3		→	CELL UPDATE	The value "radio link failure" shall be set in IE "Cell update cause".
4				The SS configures the dedicated physical channel according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
5		←	CELL UPDATE CONFIRM	This message include IE "Physical channel information elements".
6		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
7		→	RADIO BEARER RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "physical channel failure"
8		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	7
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC Periodical Reporting
- Measurement Report Transfer Mode	
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

## MEASUREMENT REPORT (Step 0b and 8)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions:

Information Element	Value/Remarks
Measurement identity	7
Measured Results	Traffic volume measured results list
- CHOICE measurement	
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

## RADIO BEARER RECONFIGURATION message (Step 1)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in Clause 9 of TS 34.108.

## CELL UPDATE (Step 3)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in Clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"radio link failure"

## CELL UPDATE CONFIRM (Step 5) (FDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in Clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
CHOICE channel requirement	Uplink DPCH info
- UplinkDPCH Info	Same as RADIO BEARER SETUP message used to move to initial condition
Downlink information common for all radio links	Same as RADIO BEARER SETUP message used to move to initial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to initial condition

## CELL UPDATE CONFIRM (Step 5) (TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in Clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_DCH
Uplink DPCH timeslots and codes	Same as RADIO BEARER SETUP message used to move to initial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to initial condition

#### RADIO BEARER RECONFIGURATION FAILURE (Step 7)

The contents of RADIO BEARER RECONFIGURATION FAILURE message in this test case is the same as the RADIO BEARER RECONFIGURATION FAILURE message as found in Clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	"physical channel failure"

#### 8.2.2.4.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

After step 2 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "radio link failure".

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE on the uplink DCCH using AM RLC.

After step 6 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".

After step 7, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on DCH at every 8s interval.

#### 8.2.2.5 Void

#### 8.2.2.6 Void

#### 8.2.2.7 Radio Bearer Reconfiguration from CELL\_DCH to CELL\_DCH: Success (Continue and stop)

##### 8.2.2.7.1 Definition

##### 8.2.2.7.2 Conformance requirement

If the IE "RB information to reconfigure" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

...

- if the IE "RB stop/continue" is included; and
  - if the "RB identity" has a value greater than 2; and
    - if the value of the IE "RB stop/continue" is "stop":
      - configure the RLC entity for the radio bearer to stop;
      - set the IE "RB started" in the variable ESTABLISHED\_RABS to "stopped" for that radio bearer;
    - if the value of the IE "RB stop/continue" is "continue":
      - configure the RLC entity for the radio bearer to continue;
      - set the IE "RB started" in the variable ESTABLISHED\_RABS to "started" for that radio bearer;

## Reference

3GPP TS 25.331 clause 8.2.2, 8.6.4.5.

### 8.2.2.7.3 Test purpose

To confirm that the UE reconfigures new radio bearer and stop the transmission and reception of the RLC entity belonging to the RB identity specified in the RADIO BEARER RECONFIGURATION message.

To confirm that the UE reconfigures new radio bearer and restart the transmission and reception of the RLC entity belonging to the RB identity specified in the RADIO BEARER RECONFIGURATION message.

### 8.2.2.7.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH (state 6-9) or PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

#### Test Procedure

The UE is in CELL\_DCH state. The SS transmits a RADIO BEARER RECONFIGURATION message including IE "RB stop/continue" set to "continue" for radio bearer with RB identity '3'. The UE reconfigures new radio bearer and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC. Then, the SS transmits an IDENTITY REQUEST message using AM RLC, the UE responds a IDENTITY RESPONSE message. The SS transmits a RADIO BEARER RECONFIGURATION message including IE "RB stop/continue" set to "stop" for radio bearer with RB identity "3". The UE reconfigures new radio bearer and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC. Then, the SS transmits a IDENTITY REQUEST message using AM RLC, the UE does not acknowledge this message and also does not respond with a IDENTITY RESPONSE message. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

#### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	This message include IE "RB stop/continue" set to "continue".
2		→	RADIO BEARER RECONFIGURATION COMPLETE	
3		←	IDENTITY REQUEST	
3a		→	IDENTITY RESPONSE	
4		←	RADIO BEARER RECONFIGURATION	This message include IE "RB stop/continue" set to "stop".
5		→	RADIO BEARER RECONFIGURATION COMPLETE	
6		←	IDENTITY REQUEST	
7		→		The SS shall not receive any data from the UE.
8		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

#### Specific Message Contents

##### RADIO BEARER RECONFIGURATION (Step 1) [\(FDD\)](#)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" found in [Annex A-clause 9 of TS 34.108](#), with the following exceptions:



Information Element	Value/remark
RB information to reconfigure list RB information to reconfigure -RB identity -RB stop/continue	3 "continue"
UL Transport channel information for all transport channels	Not Present
Added or Reconfigured UL TrCH information	Not Present
CHOICE mode	Not Present
DL Transport channel information common for all transport channel	Not Present
Deleted DL TrCH information	Not Present
Added or Reconfigured DL TrCH information	Not Present
Frequency info	Not Present
CHOICE channel requirement	Not Present
CHOICE Mode - Downlink PDSCH information	FDD Not Present
Downlink information common for all radio links	Not Present
Downlink information per radio link list -Downlink information for each radio link - Primary CPICH info - Primary scrambling code	Set to same code as used for cell 1

#### RADIO BEARER RECONFIGURATION (Step 1) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" found in clause 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>RB information to reconfigure list</u> <u>RB information to reconfigure</u> <u>-RB identity</u> <u>-RB stop/continue</u>	3 "continue"
<u>UL Transport channel information for all transport channels</u>	<u>Not Present</u>
<u>Added or Reconfigured UL TrCH information</u>	<u>Not Present</u>
<u>CHOICE mode</u>	<u>Not Present</u>
<u>DL Transport channel information common for all transport channel</u>	<u>Not Present</u>
<u>Deleted DL TrCH information</u>	<u>Not Present</u>
<u>Added or Reconfigured DL TrCH information</u>	<u>Not Present</u>
<u>Frequency info</u>	<u>Not Present</u>
<u>CHOICE channel requirement</u>	<u>Not Present</u>
<u>CHOICE Mode</u> <u>- Downlink PDSCH information</u>	<u>TDD</u> <u>Not Present</u>
<u>Downlink information common for all radio links</u>	<u>Not Present</u>
<u>Downlink information per radio link list</u> <u>-Downlink information for each radio link</u> <u>- Primary CCPCH info</u>	<u>Set to same code as used for cell 1</u>

#### RADIO BEARER RECONFIGURATION (Step 4)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in [Annex-A clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
RB information to reconfigure list RB information to reconfigure -RB identity -RB stop/continue	3 "stop"

#### 8.2.2.7.5 Test requirement

After step 3 the UE shall respond with a IDENTITY RESPONSE message.

After step 6 the UE shall not respond with a IDENTITY RESPONSE message on the stopped RB.

#### 8.2.2.8 Radio Bearer Reconfiguration from CELL\_DCH to CELL\_FACH: Success

##### 8.2.2.8.1 Definition

##### 8.2.2.8.2 Conformance requirement

If the UE receives:

- a RADIO BEARER RECONFIGURATION message; or

it shall:

- 1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:
  - 2> perform the physical layer synchronisation procedure A as specified in TS 25.214 ([for FDD only](#));
- 1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

- 1> enter a state according to TS 25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL\_FACH state, the UE shall, after the state transition:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to TS 25.304 on that frequency.
- 1> select PRACH according to TS 25.331 subclause 8.5.17;
- 1> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;
- 1> use the transport format set given in system information;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
  - 2> ignore that IE and stop using DRX.
- 1> if the contents of the variable C\_RNTI is empty:
  - 2> perform a cell update procedure according to TS 25.331 subclause 8.3.1 using the cause "Cell reselection";

...

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

- 1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

## Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

### 8.2.2.8.3 Test purpose

To confirm that the UE establishes the reconfigured radio bearer(s) using common physical channel, after UE receives a RADIO BEARER RECONFIGURATION message.

### 8.2.2.8.4 Method of test

## Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108.

## Test Procedure

The UE is in CELL\_DCH state. The SS transmits a RADIO BEARER RECONFIGURATION message, which invoke a transition from CELL\_DCH to CELL\_FACH. The UE reconfigures the radio bearers and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC. SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2		→	RADIO BEARER RECONFIGURATION COMPLETE	The UE selects PRACH and S-CCPCH indicated in SIB5 and SIB6 after entering CELL FACH state.
3		↔	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

## Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) ([FDD](#))

Use the same message sub-type titled "Packet to CELL\_FACH from CELL\_DCH in PS" in [Annex A clause 9 of TS 34.108](#), with the following exception:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4
- PDCP info	Not Present

- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DTCH)
- RB identity	20
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
Downlink information per radio link list	
-Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 1

## RADIO BEARER RECONFIGURATION (Step 1) (TDD)

Use the same message sub-type titled "Packet to CELL\_FACH from CELL\_DCH in PS" in clause 9 of TS 34.108, with the following exception:

<u>Frequency info</u> <u>Downlink information per radio link list</u> <u>-Downlink information for each radio link</u> <u>___ - Primary CCPCH info</u>	<u>Not Present</u>  <u>Set to same as used for cell 1</u>
---	---

### 8.2.2.8.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

### 8.2.2.9 Radio Bearer Reconfiguration from CELL\_DCH to CELL\_FACH: Success (Cell re-selection)

#### 8.2.2.9.1 Definition

#### 8.2.2.9.2 Conformance requirement

If the UE receives:

- a RADIO BEARER RECONFIGURATION message; or

it shall:

- 1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:
  - 2> perform the physical layer synchronisation procedure A as specified in TS 25.214 ([for FDD only](#));
- 1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.
  - 1> enter a state according to subclause 8.6.3.3.

If after state transition the UE enters CELL\_FACH state, the UE shall, after the state transition:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to [4] on that frequency.
- 1> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
  - 2> initiate a cell update procedure according to TS 25.331 subclause 8.3.1 using the cause "Cell reselection";
  - 2> when the cell update procedure completed successfully:
    - 1> select PRACH according to subclause 8.5.17;
    - 1> select Secondary CCPCH according to subclause 8.5.19;
    - 1> use the transport format set given in system information;
    - 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
      - 2> ignore that IE and stop using DRX.

The UE shall transmit a response message as specified in subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

...

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI";

the UE shall:

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

...

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

## Reference

3GPP TS 25.331 clause 8.2.2.3, 8.3.1.7, 8.2.2.4.

8.2.2.9.3 Test purpose

To confirm that the UE transmits RADIO BEARER RECONFIGURATION COMPLETE message after it completes a cell update procedure.

8.2.2.9.4 Method of test

## Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108.

## Test Procedure

The UE is in CELL\_DCH state. The SS transmits a RADIO BEARER RECONFIGURATION message, which includes IE "Primary CPICH info" and no dedicated physical channel information to transit from CELL\_DCH to CELL\_FACH. As the UE selects another cell than the specified cell, the UE shall initiate the cell update procedure. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit a CELL UPDATE CONFIRM message on downlink DCCH after receiving a CELL UPDATE message. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC. SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	
3		←	RADIO BEARER RECONFIGURATION	Assign a transition from CELL_DCH to CELL_FACH.
4		→	CELL UPDATE	The value "cell reselection" shall be set in IE "Cell update cause".
5		←	CELL UPDATE CONFIRM	See message content.
6		→	UTRAN MOBILITY INFORMATION CONFIRM	
7		→	RADIO BEARER RECONFIGURATION COMPLETE	
8		↔	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 3) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL\_FACH from CELL\_DCH in PS" found in [Annex A-clause 9 of TS 34.108](#), with the following exceptions:



Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4
- PDCP info	Not Present

- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DTCH)
- RB identity	20
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
Downlink information per radio link list	
- Downlink information for each radio links	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 2

### RADIO BEARER RECONFIGURATION (Step 3) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL\_FACH from CELL\_DCH in PS" found in [Annex A clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links - Primary CCPCH info <del>Cell parameters ID</del>	4 Set to same as used for cell 2

### CELL UPDATE (Step 4)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in Annex A with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"Cell reselection"

### CELL UPDATE CONFIRM (Step 5)

Use the same message type found in clause Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

### UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

Only the message type is checked.

#### 8.2.2.9.5 Test requirement

After step 3, the UE shall transmit CELL UPDATE message on the CCCH with IE "Cell update cause" set to "cell reselection".

After step 5, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message and then followed by RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

#### 8.2.2.10 Radio Bearer Reconfiguration: from CELL\_FACH to CELL\_DCH: Success

##### 8.2.2.10.1 Definition

##### 8.2.2.10.2 Conformance requirement

If the UE receives:

- a RADIO BEARER RECONFIGURATION message; or

it shall:

- 1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:
  - 2> perform the physical layer synchronisation procedure A as specified in TS 25.214 ([for FDD only](#));
- 1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

- 1> enter a state according to TS 25.331 subclause 8.6.3.3.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

#### Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

8.2.2.10.3 Test purpose

To confirm that the UE reconfigures the radio bearers according to a RADIO BEARER RECONFIGURATION message.

8.2.2.10.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH+DTCH\_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

#### Test Procedure

The UE is in CELL\_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE. The UE reconfigures the radio bearers and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

#### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	This message includes IE "Uplink DPCH Info"
2				Reconfiguration of radio bearer
3		→	RADIO BEARER RECONFIGURATION COMPLETE	
4		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

#### Specific Message Contents

##### RADIO BEARER RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL\_DCH from CELL\_FACH in PS" in [Annex A clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present

- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	No discard
- SDU discard mode	15
- MAX_DAT	128
- Transmission window size	400
- Timer_RST	4
- Max_RST	
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	Not Present
- RB identity	(AM DTCH)
- PDCP info	20
- PDCP SN info	Not Present
- RLC info	Not Present
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	No discard
- SDU discard mode	15
- MAX_DAT	128
- Transmission window size	400
- Timer_RST	4
- Max_RST	
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
UL Transport channel information for all transport channels	Not Present
Added or Reconfigured UL TrCH information	Not Present
DL Transport channel information common for all transport channels	Not Present
Added or Reconfigured DL TrCH information	Not Present

#### 8.2.2.10.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

#### 8.2.2.11 Radio Bearer Reconfiguration from CELL\_FACH to CELL\_DCH: Failure (Unsupported configuration)

##### 8.2.2.11.1 Definition

##### 8.2.2.11.2 Conformance requirement

If the UTRAN instructs the UE to use a configuration, which it does not support and/or if the received message causes the variable UNSUPPORTED\_CONFIGURATION to be set to TRUE, the UE shall:

- 1> transmit a failure response as specified in subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "configuration unsupported".
- 1> set the variable UNSUPPORTED\_CONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The procedure ends.

...

The UE should set the variable UNSUPPORTED\_CONFIGURATION to TRUE if the received message is not according to the UE capabilities.

#### Reference

3GPP TS 25.331 subclause 8.2.2.6, 8.5.20.

##### 8.2.2.11.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC if the received RADIO BEARER RECONFIGURATION message includes unsupported configuration parameters.

##### 8.2.2.11.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH+DTCH\_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

#### Test Procedure

The UE is in CELL\_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message, which includes unsupported configuration parameters, to the UE. The UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	The message includes an unsupported configuration for the UE
2		→	RADIO BEARER RECONFIGURATION FAILURE	The UE does not change the radio bearer.

Specific Message Contents

#### RADIO BEARER RECONFIGURATION (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL\_DCH from CELL\_FACH in PS" found in TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Frequency info	
- CHOICE mode	FDD
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

#### RADIO BEARER RECONFIGURATION (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL\_DCH from CELL\_FACH in PS" found in TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	0

#### RADIO BEARER RECONFIGURATION FAILURE

The contents of RADIO BEARER RECONFIGURATION FAILURE message in this test case is the same as the RADIO BEARER RECONFIGURATION FAILURE message as found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Failure cause	Not checked.

#### 8.2.2.11.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC.



8.2.2.12 Void

8.2.2.13 Void

8.2.2.14 Void

8.2.2.15 Void

8.2.2.16 Void

8.2.2.17 Radio Bearer Reconfiguration from CELL\_FACH to CELL\_FACH:  
Success

8.2.2.17.1 Definition

8.2.2.17.2 Conformance requirement

If the UE was in CELL\_FACH state upon reception of the reconfiguration message and remains in CELL\_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to TS 25.304 on that frequency;
  - 2> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

...

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

- 1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

8.2.2.17.3 Test purpose

To confirm that the UE establishes radio bearers according to a RADIO BEARER RECONFIGURATION message.

8.2.2.17.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH+DTCH\_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

## Test Procedure

The UE is in CELL\_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message, to the UE. The UE configures the common physical channel and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC. SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2			Void	
3		→	RADIO BEARER RECONFIGURATION COMPLETE	
4		↔	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

### Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (~~FDD~~)

Use the same message sub-type titled "Packet to CELL\_FACH from CELL\_FACH in PS" in [9] TS 34.108 clause 9 with the following exceptions.

Information Element	Value/remark
RB information to reconfigure list - RB information to reconfigure - RB identity - PDCP info - PDCP SN info - RLC info - CHOICE Uplink RLC mode - Transmission RLC discard - SDU discard mode - MAX_DAT - Transmission window size - Timer_RST - Max_RST - Polling info - Timer_poll_prohibit - Timer_poll - Poll_PDU - Poll_SDU - Last transmission PDU poll - Last retransmission PDU poll - Poll_Window - Timer_poll_periodic - CHOICE Downlink RLC mode - In-sequence delivery - Receiving window size - Downlink RLC status info - Timer_status_prohibit - Timer_EPC - Missing PDU indicator - Timer_STATUS_periodic - RB mapping info - RB stop/continue	(AM DCCH for RRC) 2 Not Present Not Present AM RLC No discard 15 128 600 4 250 250 Not present 1 TRUE TRUE 99 Not Present AM RLC TRUE 128 200 Not present TRUE Not Present Not Present
- RB information to reconfigure - RB identity - PDCP info - PDCP SN info - RLC info - CHOICE Uplink RLC mode - Transmission RLC discard - SDU discard mode - MAX_DAT - Transmission window size - Timer_RST - Max_RST - Polling info - Timer_poll_prohibit - Timer_poll - Poll_PDU - Poll_SDU - Last transmission PDU poll - Last retransmission PDU poll - Poll_Window - Timer_poll_periodic - CHOICE Downlink RLC mode - In-sequence delivery - Receiving window size - Downlink RLC status info - Timer_status_prohibit - Timer_EPC - Missing PDU indicator - Timer_STATUS_periodic - RB mapping info - RB stop/continue	(AM DCCH for NAS_DT High priority) 3 Not Present Not Present AM RLC No discard 15 128 600 4 250 250 Not present 1 TRUE TRUE 99 Not Present AM RLC TRUE 128 200 Not present TRUE Not Present Not Present
- RB information to reconfigure - RB identity - PDCP info - PDCP SN info	(AM DCCH for NAS_DT Low priority) 4 Not Present Not Present

- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	No discard
- SDU discard mode	15
- MAX_DAT	128
- Transmission window size	600
- Timer_RST	4
- Max_RST	
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	Not Present
- RB identity	(AM DTCH)
- PDCP info	20
- PDCP SN info	Not Present
- RLC info	Not Present
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	No discard
- SDU discard mode	15
- MAX_DAT	128
- Transmission window size	600
- Timer_RST	4
- Max_RST	
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
Maximum allowed UL TX power	Not Present

**RADIO BEARER RECONFIGURATION (Step 1) (TDD)**

The contents of RADIO BEARER SETUP message in this test case is identical as "Packet to CELL\_FACH from CELL\_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links → Primary CCPCH info → Cell parameters ID	4

#### 8.2.2.17.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

#### 8.2.2.18 Radio Bearer Reconfiguration from CELL\_FACH to CELL\_FACH: Success (Cell re-selection)

##### 8.2.2.18.1 Definition

##### 8.2.2.18.2 Conformance requirement

If the UE performs cell re-selection during the reconfiguration procedure, the UE shall:

- 1> initiate a cell update procedure, as specified in subclause 8.3.1;
- 1> continue with the reconfiguration procedure.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI";

the UE shall:

- 1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

- 1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

#### Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4, 8.2.2.8, 8.3.1.7.

##### 8.2.2.18.3 Test purpose

To confirm that the UE transmits RADIO BEARER RECONFIGURATION COMPLETE message in cell 2 when a cell re-selection occurs after receiving a RADIO BEARER RECONFIGURATION message.

## 8.2.2.18.4

## Method of test

## Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active.

UE: PS-DCCH+DTCH\_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

## Test Procedure

**Table 8.2.2.18**

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84 MHz	-60	-75	-75	-60
P-CCPCH (TDD)	dBm	-60	-75	-75	-60

Table 8.2.2.18 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL\_FACH state in cell 1. The SS configures RB2 to stop transmission and reception of RLC PDUs. On transmitting a RADIO BEARER RECONFIGURATION message to the UE on RB 1, the SS configures its downlink transmission power settings according to columns "T1" in table 8.2.2.18. The UE shall initiate the cell reselection procedure, which may occur either before or after submitting the RADIO BEARER RECONFIGURATION COMPLETE message for transmission on the DCCH using AM RLC. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit a CELL UPDATE CONFIRM message on downlink DCCH and configure RB2 to continue transmission and reception of RLC PDUs after receiving CELL UPDATE message. Any RADIO BEARER RECONFIGURATION COMPLETE message that was previously submitted for transmission in the UE will now be received by the SS. UE transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC. If not already done so, the UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC. SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

NOTE 1: The RADIO BEARER RECONFIGURATION COMPLETE message may be received by the SS either after reception of CELL UPDATE CONFIRM (Option 1) or after transmitting UTRAN MOBILITY INFORMATION CONFIRM (Option 2).

NOTE 2: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	SS			The SS configures RB 2 to stop transmission and reception of RLC PDUs.
1	←		RADIO BEARER RECONFIGURATION	The message is transmitted on RB 1.
2				The SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.2.18.
3			Void	
				The following messages are transmitted in cell 2.
4	→		CELL UPDATE	The value "cell reselection" shall be set in IE "cell update cause".
5	←		CELL UPDATE CONFIRM	See message content.
5a	SS			The SS configures RB 2 to continue transmission and reception of RLC PDUs.
5b	→		RADIO BEARER RECONFIGURATION COMPLETE (Option 1)	
6	→		UTRAN MOBILITY INFORMATION CONFIRM	
7	→		RADIO BEARER RECONFIGURATION COMPLETE (Option 2)	
8	↔		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

## Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (~~FDD~~)

Use the same message sub-type titled "Packet to CELL\_FACH from CELL\_FACH in PS" in [Annex-A clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
RB information to reconfigure list - RB information to reconfigure - RB identity - PDCP info - PDCP SN info - RLC info - CHOICE Uplink RLC mode - Transmission RLC discard - SDU discard mode - MAX_DAT - Transmission window size - Timer_RST - Max_RST - Polling info - Timer_poll_prohibit - Timer_poll - Poll_PDU - Poll_SDU - Last transmission PDU poll - Last retransmission PDU poll - Poll_Window - Timer_poll_periodic - CHOICE Downlink RLC mode - In-sequence delivery - Receiving window size - Downlink RLC status info - Timer_status_prohibit - Timer_EPC - Missing PDU indicator - Timer_STATUS_periodic - RB mapping info - RB stop/continue	(AM DCCH for RRC) 2 Not Present Not Present AM RLC No discard 15 128 600 4 250 250 Not present 1 TRUE TRUE 99 Not Present AM RLC TRUE 128 200 Not present TRUE Not Present Not Present
- RB information to reconfigure - RB identity - PDCP info - PDCP SN info - RLC info - CHOICE Uplink RLC mode - Transmission RLC discard - SDU discard mode - MAX_DAT - Transmission window size - Timer_RST - Max_RST - Polling info - Timer_poll_prohibit - Timer_poll - Poll_PDU - Poll_SDU - Last transmission PDU poll - Last retransmission PDU poll - Poll_Window - Timer_poll_periodic - CHOICE Downlink RLC mode - In-sequence delivery - Receiving window size - Downlink RLC status info - Timer_status_prohibit - Timer_EPC - Missing PDU indicator - Timer_STATUS_periodic - RB mapping info - RB stop/continue	(AM DCCH for NAS_DT High priority) 3 Not Present Not Present AM RLC No discard 15 128 600 4 250 250 Not present 1 TRUE TRUE 99 Not Present AM RLC TRUE 128 200 Not present TRUE Not Present Not Present
- RB information to reconfigure - RB identity - PDCP info - PDCP SN info	(AM DCCH for NAS_DT Low priority) 4 Not Present Not Present



- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	No discard
- SDU discard mode	15
- MAX_DAT	128
- Transmission window size	600
- Timer_RST	4
- Max_RST	
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	Not Present
- RB identity	(AM DTCH)
- PDCP info	20
- PDCP SN info	Not Present
- RLC info	Not Present
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	No discard
- SDU discard mode	15
- MAX_DAT	128
- Transmission window size	600
- Timer_RST	4
- Max_RST	
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
Maximum allowed UL TX power	Not Present

### **RADIO-BEARER RECONFIGURATION (Step 1) (TDD)**

**Use the same message sub-type titled "Packet to CELL\_FACH from CELL\_FACH in PS" in Annex A with the following exceptions:**

Information Element	Value/remark
Downlink information for each radio links → Primary CCPCH info → Cell parameters ID	Not present

#### CELL UPDATE (Step 4)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in [Annex A clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"cell reselection"

#### CELL UPDATE CONFIRM (Step 5)

Use the same message type found in clause [Annex A9 of TS 34.108](#), with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

#### UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

Only the message type is checked.

##### 8.2.2.18.5 Test requirement

After step 2 the UE shall transmit a CELL UPDATE message on the CCCH with IE "cell update cause" set to "cell reselection".

After step 5 UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC.

The UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC. This message may be received by the SS earliest after step 5a and at latest after step 6.

##### 8.2.2.19 Radio Bearer Reconfiguration from CELL\_DCH to CELL\_DCH: Success (Subsequently received)

###### 8.2.2.19.1 Definition

###### 8.2.2.19.2 Conformance requirement

If the IE "RRC transaction identifier" is included in a received message, the UE shall perform the actions below. The UE shall:

If the received message is any of the messages:

- RADIO BEARER RECONFIGURATION; or

...

the UE shall:

- 2> if the variable ORDERED\_RECONFIGURATION is set to TRUE; or
- 2> if the variable CELL\_UPDATE\_STARTED is set to TRUE; or
- 2> if the table "Accepted transactions" in the variable TRANSACTIONS contains an entry with an IE "Message Type" set to ACTIVE SET UPDATE; or
- 2> if the received message contains a protocol error according to TS 25.331 clause 9 causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE:
  - 3> if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the same "Message Type" as the received message in the table "Accepted transactions" in the variable TRANSACTIONS:
  - 4> ignore the transaction; and

- 4> continue with any ongoing processes and procedures as the message was not received;
- 4> and end the procedure.
- 3> else:
  - ...

Reference

3GPP TS 25.331 clause 8.6.3.11.

8.2.2.19.3 Test purpose

To confirm that if the UE receives a new RADIO BEARER RECONFIGURATION message before the UE configures the radio bearer according to a previous RADIO BEARER RECONFIGURATION message, it ignores the new RADIO BEARER RECONFIGURATION message and configures the radio bearer according to the previous RADIO BEARER RECONFIGURATION message received.

8.2.2.19.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH\_DCH (state 6-9) or PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE is in CELL\_DCH state. SS transmits a RADIO BEARER RECONFIGURATION message to the UE before the UE configures the radio bearer according to the RADIO BEARER RECONFIGURATION message prior to this new message. The UE ignores the new RADIO BEARER RECONFIGURATION message and configures according to the former RADIO BEARER RECONFIGURATION message. On completion of radio bearer configuration, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	Periodic RLC STATUS PDU transmission is activated. For FDD, the UL scrambling code is set to "1". For TDD, the code combination is assigned by SS.
2		←	RADIO BEARER RECONFIGURATION	Sent before the "activation time" in step 1 has elapsed. Periodic RLC STATUS PDU transmission is not activated. For FDD, the UL scrambling code is set to "2". For TDD the code combination assigned is different to that assigned in step 1.
3		→	RADIO BEARER RECONFIGURATION COMPLETE	The UE ignores the RADIO BEARER RECONFIGURATION message in step 2 and performs configuration according to the RADIO BEARER RECONFIGURATION message in step 1.
4			Void	
5		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

## Specific Message Contents

### RADIO BEARER RECONFIGURATION (Step 1) (FDD and PS Domain)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL\_DCH from CELL\_DCH in PS" as found in TS 34.108 clause 9.1 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	400
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	400
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)

- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	AM RLC
- CHOICE Uplink RLC mode	No discard
- Transmission RLC discard	15
- SDU discard mode	128
- MAX_DAT	400
- Transmission window size	4
- Timer_RST	150
- Max_RST	150
- Polling info	Not present
- Timer_poll_prohibit	1
- Timer_poll	TRUE
- Poll_PDU	TRUE
- Poll_SDU	99
- Last transmission PDU poll	Not Present
- Last retransmission PDU poll	AM RLC
- Poll_Window	TRUE
- Timer_poll_periodic	128
- CHOICE Downlink RLC mode	200
- In-sequence delivery	Not Present
- Receiving window size	TRUE
- Downlink RLC status info	400
- Timer_status_prohibit	Not Present
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	400
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DTCH)
- RB identity	20
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	AM RLC
- CHOICE Uplink RLC mode	No discard
- Transmission RLC discard	15
- SDU discard mode	128
- MAX_DAT	400
- Transmission window size	4
- Timer_RST	150
- Max_RST	150
- Polling info	Not Present
- Timer_poll_prohibit	1
- Timer_poll	TRUE
- Poll_PDU	TRUE
- Poll_SDU	99
- Last transmission PDU poll	Not Present
- Last retransmission PDU poll	AM RLC
- Poll_Window	TRUE
- Timer_poll_periodic	128
- CHOICE Downlink RLC mode	200
- In-sequence delivery	Not Present
- Receiving window size	TRUE
- Downlink RLC status info	400
- Timer_status_prohibit	Not Present
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	400
- RB mapping info	Not Present
- RB stop/continue	Not Present
UL Transport channel information for all transport channels	Not Present
Added or Reconfigured UL TrCH information	Not Present
CHOICE mode	Not Present
DL Transport channel information common for all transport channel	Not Present
Deleted DL TrCH information	Not Present
Added or Reconfigured DL TrCH information	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present

CHOICE channel requirement - CHOICE mode - Scrambling code number CHOICE Mode - Downlink PDSCH information Downlink information common for all radio links		Uplink DPCH info FDD 1 FDD Not Present Not Present
Downlink information per radio link list	Rel-4 or later	Not Present
Downlink information per radio link list -Downlink information for each radio link - Primary CPICH info - Primary scrambling code	R99	Set to same code as used for cell 1

#### RADIO BEARER RECONFIGURATION (Step 1) (FDD and CS Domain)

The contents of the RADIO BEARER RECONFIGURATION message in this test case are identical to those specified for "Speech in CS" or "Non speech in CS" as found in TS 34.108 clause 9.1 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	400
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	400
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)



- RB identity		4
- PDCP info		Not Present
- PDCP SN info		Not Present
- RLC info		
- CHOICE Uplink RLC mode		AM RLC
- Transmission RLC discard		
- SDU discard mode		No discard
- MAX_DAT		15
- Transmission window size		128
- Timer_RST		400
- Max_RST		4
- Polling info		
- Timer_poll_prohibit		150
- Timer_poll		150
- Poll_PDU		Not present
- Poll_SDU		1
- Last transmission PDU poll		TRUE
- Last retransmission PDU poll		TRUE
- Poll_Window		99
- Timer_poll_periodic		Not Present
- CHOICE Downlink RLC mode		AM RLC
- In-sequence delivery		TRUE
- Receiving window size		128
- Downlink RLC status info		
- Timer_status_prohibit		200
- Timer_EPC		Not Present
- Missing PDU indicator		TRUE
- Timer_STATUS_periodic		400
- RB mapping info		Not Present
- RB stop/continue		Not Present
UL Transport channel information for all transport channels		Not Present
Added or Reconfigured UL TrCH information		Not Present
CHOICE mode		Not Present
DL Transport channel information common for all transport channel		Not Present
Deleted DL TrCH information		Not Present
Added or Reconfigured DL TrCH information		Not Present
Frequency info		Not Present
Maximum allowed UL TX power		Not Present
CHOICE channel requirement		Uplink DPCH info
- CHOICE mode		FDD
- Scrambling code number		1
CHOICE Mode		FDD
- Downlink PDSCH information		Not Present
Downlink information common for all radio links		Not Present
Downlink information per radio link list	Rel-4 or later	Not Present
Downlink information per radio link list	R99	
-Downlink information for each radio link		
- Primary CPICH info		
- Primary scrambling code		Set to same code as used for cell 1

## RADIO BEARER RECONFIGURATION (Step 1) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL\_DCH from CELL\_DCH in PS" as found in TS 34.108 clause 9.1 with the following exceptions:

Information Element		Value/remark
RRC transaction identifier		0
Activation Time <a href="#">CHOICE mode</a> - Uplink DPCH timeslots and codes - First timeslot code list <a href="#">Downlink information common for all radio links</a>		[256+Current CFN-[current CFN mod 8 + 8 ]]MOD 256 <a href="#">TDD</a>  Assigned by SS <a href="#">Not Present</a>
<a href="#">Downlink information per radio link list</a>	<a href="#">Rel-4 or later</a>	<a href="#">Not Present</a>
<a href="#">Downlink information per radio link list</a> - <a href="#">Downlink information for each radio link</a> - <a href="#">Primary CCPCH info</a>	<a href="#">R99</a>	<a href="#">Set to same as used for cell 1</a>

#### RADIO BEARER RECONFIGURATION (Step 2) (FDD and PS Domain)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL\_DCH from CELL\_DCH in PS" as found in TS 34.108 clause 9.1 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4

- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DTCH)
- RB identity	20
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
UL Transport channel information for all transport channels	Not Present
Added or Reconfigured UL TrCH information	Not Present
CHOICE mode	Not Present
DL Transport channel information common for all transport channel	Not Present
Deleted DL TrCH information	Not Present
Added or Reconfigured DL TrCH information	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present

CHOICE channel requirement - CHOICE mode - Scrambling code number		Uplink DPCH infoN FDD 2
CHOICE Mode - Downlink PDSCH information		FDD Not Present
Downlink information common for all radio links		Not Present
Downlink information per radio link list	Rel-4 or later	Not Present
Downlink information per radio link list -Downlink information for each radio link - Primary CPICH info - Primary scrambling code	R99	Set to same code as used for cell 1

#### RADIO BEARER RECONFIGURATION (Step 2) (FDD and CS Domain)

The contents of the RADIO BEARER RECONFIGURATION message in this test case are identical to those specified for "Speech in CS" or "Non speech in CS" as found in TS 34.108 clause 9.1 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4

- PDCP info		Not Present
- PDCP SN info		Not Present
- RLC info		
- CHOICE Uplink RLC mode		AM RLC
- Transmission RLC discard		
- SDU discard mode		No discard
- MAX_DAT		15
- Transmission window size		128
- Timer_RST		400
- Max_RST		4
- Polling info		
- Timer_poll_prohibit		150
- Timer_poll		150
- Poll_PDU		Not present
- Poll_SDU		1
- Last transmission PDU poll		TRUE
- Last retransmission PDU poll		TRUE
- Poll_Window		99
- Timer_poll_periodic		Not Present
- CHOICE Downlink RLC mode		AM RLC
- In-sequence delivery		TRUE
- Receiving window size		128
- Downlink RLC status info		
- Timer_status_prohibit		200
- Timer_EPC		Not Present
- Missing PDU indicator		TRUE
- Timer_STATUS_periodic		Not Present
- RB mapping info		Not Present
- RB stop/continue		Not Present
UL Transport channel information for all transport channels		Not Present
Added or Reconfigured UL TrCH information		Not Present
CHOICE mode		Not Present
DL Transport channel information common for all transport channel		Not Present
Deleted DL TrCH information		Not Present
Added or Reconfigured DL TrCH information		Not Present
Frequency info		Not Present
Maximum allowed UL TX power		Not Present
CHOICE channel requirement		Uplink DPCH info
- CHOICE mode		FDD
- Scrambling code number		2
CHOICE Mode		FDD
- Downlink PDSCH information		Not Present
Downlink information common for all radio links		Not Present
Downlink information per radio link list	Rel-4 or later	Not Present
Downlink information per radio link list	R99	
- Downlink information for each radio link		
- Primary CPICH info		
- Primary scrambling code		Set to same code as used for cell 1

## RADIO BEARER RECONFIGURATION (Step 2) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL\_DCH from CELL\_DCH in PS" found in TS 34.108 clause 9.1 with the following exceptions:

Information Element		Value/remark
RRC transaction identifier		0
Activation Time <a href="#">CHOICE mode</a> - Uplink DPCH timeslots and codes - First timeslot code list <a href="#">Downlink information common for all radio links</a>		Not Present <a href="#">TDD</a> A different code combination to that used in step 1. <a href="#">Not Present</a>
<a href="#">Downlink information per radio link list</a>	<a href="#">Rel-4 or later</a>	<a href="#">Not Present</a>
<a href="#">Downlink information per radio link list</a> - <a href="#">Downlink information for each radio link</a> - <a href="#">Primary CCPCH info</a>	<a href="#">R99</a>	<a href="#">Set to same as used for cell 1</a>

#### 8.2.2.19.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

#### 8.2.2.20 Void

#### 8.2.2.21 Void

#### 8.2.2.22 Void

#### 8.2.2.23 Radio Bearer Reconfiguration from CELL\_FACH to CELL\_PCH: Success

##### 8.2.2.23.1 Definition

##### 8.2.2.23.2 Conformance requirement

If the UE receives:

- a RADIO BEARER RECONFIGURATION message; or

it shall:

- 1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:
- 2> perform the physical layer synchronisation procedure A as specified in TS 25.214 ([for FDD only](#));
- 1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

- 1> enter a state according to TS 25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL\_PCH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to TS 25.304 on that frequency.
- 1> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
  - 2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in TS 25.331 subclause 8.6.3.2.
- 1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:



2> set the variable INVALID\_CONFIGURATION to TRUE.

...

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

## Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

### 8.2.2.23.3 Test purpose

To confirm that the UE transmits RADIO BEARER RECONFIGURATION COMPLETE message and enters CELL\_PCH state after it received a RADIO BEARER RECONFIGURATION message, which invoke the UE to transit from CELL\_FACH to CELL\_PCH.

### 8.2.2.33.4 Method of test

## Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH+DTCH\_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

## Test Procedure

The UE is in CELL\_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC and enters CELL\_PCH state. SS calls for generic procedure C.4 to check that UE is in CELL\_PCH state.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2		→	RADIO BEARER RECONFIGURATION COMPLETE	
3		SS		The UE is in CELL_PCH state.
4		↔	CALL C.4	If the test result of C.4 indicates that UE is in CELL_PCH state, the test passes, otherwise it fails.

## Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

Use the same message sub-type titled "Packet to CELL\_FACH from CELL\_FACH in PS" in [Annex A clause 9 of TS 34.108](#), with following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	500
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	500
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4

- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	500
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DTCH)
- RB identity	20
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	500
- RB mapping info	Not Present
- RB stop/continue	Not Present
Maximum allowed UL TX power	Not Present

### RADIO-BEARER RECONFIGURATION (Step 1) (TDD)

The contents of RADIO-BEARER SETUP message in this test case is identical as "Packet to CELL\_FACH from CELL\_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
Downlink information for each radio links <del>Primary CDPCH info</del> <del>Cell parameters ID</del>	4

#### 8.2.2.23.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on uplink DCCH using AM RLC.

#### 8.2.2.24 Void

#### 8.2.2.25 Radio Bearer Reconfiguration for transition from CELL\_FACH to CELL\_DCH including modification of previously signalled CELL\_DCH configuration

##### 8.2.2.25.1 Definition

##### 8.2.2.25.2 Conformance requirement

1. If the UE receives:
  - a RADIO BEARER RECONFIGURATION message; or

it shall:

- 1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:
- 2> perform the physical layer synchronisation procedure A as specified in TS 25.214 (for FDD only) ~~or TS 25.224 for TDD~~;
- 1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

- 1> enter a state according to TS 25.331 subclause 8.6.3.3.

...

2. The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

- 1> clear that entry;

...

3. In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

- 1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

#### Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

#### 8.2.2.25.3 Test purpose

To confirm that the UE applies a previously signalled configuration for CELL\_DCH and in addition modifies the parameters for which reconfiguration is requested in the RADIO BEARER RECONFIGURATION message that is used to initiate transition from CELL\_FACH to CELL\_DCH.

#### 8.2.2.25.4 Method of test

##### Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH+DTCH\_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

##### Test Procedure

- a) The UE is in CELL\_FACH state.
- b) The SS transmits a RADIO BEARER RECONFIGURATION message including dedicated physical channel information to request the UE to transit from CELL\_FACH to CELL\_DCH and change the configuration of RLC parameters. Upon receiving this message, the UE establishes the radio bearer and transport channel configuration for CELL\_DCH included in a previous RADIO BEARER SETUP message and modifies the parameters for which reconfiguration was requested in the RADIO BEARER RECONFIGURATION message.
- c) The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.
- d) SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

##### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	Initiates the transition from CELL_FACH to CELL_DCH and reconfigures RLC parameters.
2		→	RADIO BEARER RECONFIGURATION COMPLETE	
2a			Void	
3		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

##### Specific Message Contents

###### RADIO BEARER RECONFIGURATION (Step 1)

The contents of RADIO BEARER RECONFIGURATION message is identical as "RADIO BEARER RECONFIGURATION message" as found in TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	300
- Max_RST	1
- Polling info	
- Timer_poll_prohibit	Not present
- Timer_poll	100
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_ECP	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	400
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Same as for RB identity 2
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Same as for RB identity 2
- RB mapping info	Not Present
- RB stop/continue	Not Present

## RADIO BEARER RECONFIGURATION COMPLETE (Step 2)

The contents of RADIO BEARER RECONFIGURATION COMPLETE message is identical as "RADIO BEARER RECONFIGURATION COMPLETE message" as found in clause 9 of TS 34.108.

### 8.2.2.25.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

### 8.2.2.26 Radio Bearer Reconfiguration from CELL\_DCH to CELL\_DCH: Success (Incompatible Simultaneous Reconfiguration)

#### 8.2.2.26.1 Definition

#### 8.2.2.26.2 Conformance requirement

If the UE receives:

- a RADIO BEARER RECONFIGURATION message; or

...

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

...

If the IE "Ciphering mode info" is present and if the IE "Reconfiguration" in the variable CIPHERING\_STATUS is set to TRUE, the UE shall:

- 1> ignore this second attempt to change the ciphering configuration; and
- 1> set the variable INCOMPATIBLE\_SECURITY\_RECONFIGURATION to TRUE.

If the IE "Ciphering mode info" is present and if the IE "Reconfiguration" in the variable CIPHERING\_STATUS is set to FALSE, the UE shall:

- 1> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to TRUE;

...

If the variable INCOMPATIBLE\_SECURITY\_RECONFIGURATION is set to TRUE due to the received reconfiguration message, the UE shall:

- 1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to the cause value "incompatible simultaneous reconfiguration".
- 1> set the variable INCOMPATIBLE\_SECURITY\_RECONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The procedure ends.

## Reference

3GPP TS 25.331 clause 8.2.2.12a, clause 8.6.3.4.

### 8.2.2.26.3 Test purpose

1. To confirm that the UE ignores the subsequent security reconfiguration information which is contained in the RADIO BEARER RECONFIGURATION message.
2. To confirm that the UE reconfigures according to the SECURITY MODE COMMAND message.
3. To confirm that the UE transmits RADIO BEARER RECONFIGURATION FAILURE message on the uplink DCCH using AM RLC.
4. To confirm that the UE transmits SECURITY MODE COMPLETE message on the uplink DCCH using AM RLC.

### 8.2.2.26.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH\_DCH (state 6-9) or PS-DCCH+DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

## Test Procedure

The UE is in CELL\_DCH state. The SS transmits a SECURITY MODE COMMAND message. SS then transmits a RADIO BEARER RECONFIGURATION message. The UE ignores the RADIO BEARER RECONFIGURATION message and transmits a RADIO BEARER RECONFIGURATION FAILURE message and configures the radio bearers according to the SECURITY MODE COMMAND message. On completion of ciphering reconfiguration, the UE shall transmit a SECURITY MODE COMPLETE message on the DCCH using AM RLC.

### Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	SECURITY MODE COMMAND	This message includes IE "Ciphering mode info".
2		←	RADIO BEARER RECONFIGURATION	SS send this message before the activation time in step 1 expires. This message includes IE "Ciphering mode info".
3		→	RADIO BEARER RECONFIGURATION FAILURE	The UE ignores the ciphering mode information in step 2.
4		→	SECURITY MODE COMPLETE	

### Specific Message Contents

#### SECURITY MODE COMMAND (Step 1)

If the initial state of the UE is state 6-9, use the message sub-type in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Ciphering mode info	
- Ciphering mode command	Start/restart
- Ciphering algorithm	Use one of the supported ciphering algorithms
- Ciphering activation time for DPCH	$(256 + \text{CFN} - (\text{CFN} \bmod 8 + 8)) \bmod 256$
- Radio bearer downlink ciphering activation time	
info	
- Radio bearer activation time	
- RB identity	1
- RLC sequence number	Current RLC SN+X (Note 1)
- RB identity	2
- RLC sequence number	Current RLC SN+4
- RB identity	3
- RLC sequence number	Current RLC SN+X (Note 1)
- RB identity	4
- RLC sequence number	Current RLC SN+X (Note 1)

If the initial state of the UE is state 6-10, use the message sub-type in clause 9 of TS 34.108, with the following exceptions:



Information Element	Value/remark
RRC transaction identifier	0
Ciphering mode info	Start/restart
- Ciphering mode command	Use one of the supported ciphering algorithms
- Ciphering algorithm	(256+CFN-(CFN MOD 8 + 8))MOD 256
- Ciphering activation time for DPCH	
- Radio bearer downlink ciphering activation time	
info	
- Radio bearer activation time	1
- RB identity	Current RLC SN+X (Note 1)
- RLC sequence number	2
- RB identity	Current RLC SN+4
- RLC sequence number	3
- RB identity	Current RLC SN+X (Note 1)
- RLC sequence number	4
- RB identity	Current RLC SN+X (Note 1)
- RLC sequence number	20
- RB identity	Current RLC SN+X (Note 1)
- RLC sequence number	Current RLC SN+X (Note 1)

#### RADIO BEARER RECONFIGURATION (for Step 2)

If the initial state of the UE is state 6-9, use the message sub-type entitled "Speech in CS" or "Non-speech in CS" in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Ciphering mode info	Start/restart
- Ciphering mode command	Use one of the supported ciphering algorithms
- Ciphering algorithm	(256+CFN-(CFN MOD 8 + 8))MOD 256
- Ciphering activation time for DPCH	
- Radio bearer downlink ciphering activation time	
info	
- Radio bearer activation time	1
- RB identity	Current RLC SN+X (Note 1)
- RLC sequence number	2
- RB identity	Current RLC SN+4
- RLC sequence number	3
- RB identity	Current RLC SN+X (Note 1)
- RLC sequence number	4
- RB identity	Current RLC SN+X (Note 1)
- RLC sequence number	Current RLC SN+X (Note 1)

If the initial state of the UE is state 6-10, use the message sub-type entitled "Packet to CELL\_DCH from CELL\_DCH in PS" in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Ciphering mode info	Start/restart
- Ciphering mode command	Use one of the supported ciphering algorithms
- Ciphering algorithm	(256+CFN-(CFN MOD 8 + 8))MOD 256
- Ciphering activation time for DPCH	
- Radio bearer downlink ciphering activation time	
info	
- Radio bearer activation time	1
- RB identity	Current RLC SN+X (Note 1)
- RLC sequence number	2
- RB identity	Current RLC SN+4
- RLC sequence number	3
- RB identity	Current RLC SN+X (Note 1)
- RLC sequence number	4
- RB identity	Current RLC SN+X (Note 1)
- RLC sequence number	20
- RB identity	Current RLC SN+X (Note 1)
- RLC sequence number	Current RLC SN+X (Note 1)

Note 1: X is set to 1.

## RADIO BEARER RECONFIGURATION FAILURE (for Step 3)

Check that the message received is the same as the message sub-type found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	incompatible simultaneous reconfiguration

### 8.2.2.26.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC and set the failure cause to "incompatible simultaneous reconfiguration".  
After step 3 the UE shall transmit a SECURITY MODE COMPLETE message on the DCCH using AM RLC specified in step 1.

### 8.2.2.27 Radio Bearer Reconfiguration for transition from CELL\_DCH to CELL\_DCH (Frequency band modification): Success

#### 8.2.2.27.1 Definition

#### 8.2.2.27.2 Conformance requirement

If the UE receives:

- a RADIO BEARER RECONFIGURATION message;

it shall:

- 1> perform the physical layer synchronisation procedure as specified in TS 25.214 for FDD and TS 25.224 for TDD;
- 1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.
  - 1> enter a state according to TS25.331 subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

- 1> handle the message as if IE "RB information to reconfigure" was absent.

If the UE was in CELL\_DCH state upon reception of the reconfiguration message and remains in CELL\_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> if the IE "Downlink information for each radio link" is absent, not change its current DL Physical channel configuration.

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

- 1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

#### Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

#### 8.2.2.27.3 Test purpose

1. To confirm that the UE transits from CELL\_DCH to CELL\_DCH according to the RADIO BEARER RECONFIGURATION message.
2. To confirm that the UE transmits the RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC on a dedicated physical channel in a different frequency.

## 8.2.2.27.4

## Method of test

## Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.

UE: CS-DCCH\_DTCH\_DCH (state 6-9) or PS\_DCCH\_DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

## Test Procedure

**Table 8.2.2.27**

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/3.84 MHz	-55	-72	Off	-55
P-CCPCH RSCP (TDD)	dBm	-55	-72	Off	-55

Table 8.2.2.27 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL\_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.2.27. For FDD mode, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER RECONFIGURATION message including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code which is assigned to P-CPICH of cell 6. For TDD mode, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER RECONFIGURATION message including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CCPCH info" set to cell 6 parameters. The UE shall select cell 6 and reconfigure its radio access bearer after receiving this message, and then remains in CELL\_DCH state. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC after complete configuration according to receiving RADIO BEARER RECONFIGURATION message. Upon completion of the procedure, the SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.2.27.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.2.27.
3		←	RADIO BEARER RECONFIGURATION	Including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6 for FDD mode or IE "Primary CCPCH info" set to cell 6 parameters.
4		→	RADIO BEARER RECONFIGURATION COMPLETE	The UE sends this message on a dedicated physical channel in cell 6.
5		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 3) (FDD)

The contents RADIO BEARER RECONFIGURATION message in this test case is identical the message sub-type indicated by "Packet to in PS" or "Speech in CS" or "Non speech from CELL\_DCH to CELL\_DCH in CS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info <a href="#">CHOICE mode</a> - UARFCN uplink(Nu) - UARFCN downlink(Nd) Downlink information for each radio links - Primary CPICH info - Primary Scrambling Code	<a href="#">FDD</a> Same uplink UARFCN as used for cell 6 Same downlink UARFCN as used for cell 6  Set to same code as used for cell 6

RADIO BEARER RECONFIGURATION (Step 3) (TDD)

The contents RADIO BEARER RECONFIGURATION message in this test case is identical the message sub-type indicated by "Packet to in PS" or "Speech in CS" or "Non speech from CELL\_DCH to CELL\_DCH in CS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info <a href="#">CHOICE mode</a> - UARFCN (Nt) Downlink information for each radio links - Primary CCPCH info - Cell parameters ID	<a href="#">TDD</a> Same UARFCN as used for cell 6  As used for cell 6

8.2.2.27.5 Test requirement

After step 3 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC in cell 6.

After step 4 the UE shall be in CELL\_DCH state in cell 6.

## 8.2.2.28 Radio Bearer Reconfiguration for transition from CELL\_DCH to CELL\_FACH (Transport channel type switching with frequency band modification): Success

### 8.2.2.28.1 Definition

### 8.2.2.28.2 Conformance requirement

If the UE receives:

-a RADIO BEARER RECONFIGURATION message;

it shall:

- 1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.
- 1> enter a state according to TS25.331 subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

- 1> handle the message as if IE "RB information to reconfigure" was absent.

If after state transition the UE enters CELL\_FACH state, the UE shall, after the state transition:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to TS25.304 on that frequency.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to TS25.304.
- 1> if the received reconfiguration message included the IE "Primary CPICH info" for FDD or the IE "Primary CCPCH info" for TDD, and the UE selects another cell than indicated by this IE:
  - 2> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "Cell reselection";
- 1> select PRACH according to TS25.331 subclause 8.5.17;
- 1> select Secondary CCPCH according to TS25.331 subclause 8.5.19;
- 1> use the transport format set given in system information;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
  - 2> ignore that IE and stop using DRX.
- 1> if the contents of the variable C\_RNTI is empty:
  - 2> perform a cell update procedure according to TS 25.331 subclause 8.3.1 using the cause "Cell reselection";

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

- 1> transmit a RADIO BEARER RECONFIGURATION COMPLETE on the uplink DCCH using AM RLC, using the new configuration after the state transition.
- 1> the procedure ends.

## Reference

3GPP TS 25.331 clause 8.2.2.

### 8.2.2.28.3 Test purpose

1. To confirm that the UE transits from CELL\_DCH to CELL\_FACH according to the RADIO BEARER RECONFIGURATION message.
2. To confirm that the UE transmits RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC on a common physical channel in a different frequency.

### 8.2.2.28.4 Method of test

#### Initial Condition

System Simulator: 2 cells – Cell 1 in active and cell 6 is inactive.

UE: "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

#### Test Procedure

**Table 8.2.2.28**

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/3.84 MHz	-55	-72	Off	-55
P-CCPCH RSCP (TDD)	dBm	-55	-72	Off	-55

Table 8.2.2.28 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 6.

The UE is in idle mode of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.2.28. SS requests operator to make an outgoing call. The SS and UE execute procedure P5. Next The SS and the UE execute procedure P9 and then execute procedure P13. For FDD mode, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER RECONFIGURATION message including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6. For TDD mode, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER RECONFIGURATION message including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CCPCH info" set to cell 6 parameters. On receiving the RADIO BEARER RECONFIGURATION message, the UE shall select cell 6 and transmit a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC after complete configuration according to the RADIO BEARER RECONFIGURATION message. Upon completion of the procedure, the SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.2.28. SS requests operator to make an outgoing call.
2	←→		SS executes procedure P5 (clause 7.4.2.2.2) specified in TS 34.108.	
3	←→		SS executes procedure P9 (clause 7.4.2.4.2) specified in TS 34.108.	
4	←→		SS executes procedure P13 (clause 7.4.2.6.2) specified in TS 34.108.	
5				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.2.28.
6	←		RADIO BEARER RECONFIGURATION	Including IE "Frequency info" and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6 for FDD mode or IE "Primary CCPCH info" set to cell 6 parameters.
7	→		RADIO BEARER RECONFIGURATION COMPLETE	The UE transmits this message on the common physical channel in cell 6.
8	←→		CALL C.2	f the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 5) (FDD)

Use the same message sub-type titled "Packet to CELL\_FACH from CELL\_DCH in PS" in [9] TS 34.108 clause 9 ~~[9] TS 34.108 clause 9~~ with the following exception:

Information Element	Value/remark
Frequency info <a href="#">CHOICE mode</a> - UARFCN uplink(Nu) - UARFCN downlink(Nd) Downlink information for each radio link - Primary CPICH info - Primary Scrambling Code	<a href="#">FDD</a> Same uplink UARFCN as used for cell 6 Same downlink UARFCN as used for cell 6  Set to same code as used for cell 6

RADIO BEARER RECONFIGURATION (Step 5) (TDD)

Use the same message sub-type titled "Packet to CELL\_FACH from CELL\_DCH in PS" in [9] TS 34.108 clause 9 ~~[9] TS 34.108 clause 9~~ with the following exception:

Information Element	Value/remark
Frequency info <a href="#">CHOICE mode</a> - UARFCN (Nt) Downlink information for each radio links - Primary CCPCH info - Cell parameters ID	<a href="#">TDD</a> Same UARFCN as used for cell 6  As used for cell 6

After step 6 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 7 the UE shall be in CELL\_FACH state.

8.2.2.29 Void

8.2.2.30 Void

8.2.2.31 Radio Bearer Reconfiguration for transition from CELL\_FACH to CELL\_DCH (Frequency band modification): Success

8.2.2.31.1 Definition

8.2.2.31.2 Conformance requirement

If the UE receives:

...

-a RADIO BEARER RECONFIGURATION message; or

...

it shall:

...

1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in TS 25.214 (FDD only);

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

...

1> enter a state according to TS25.331 subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

If after state transition the UE enters CELL\_DCH state, the UE shall, after the state transition:

1> in FDD; or

1> in TDD when "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:

2> remove any C-RNTI from MAC;

2> clear the variable C\_RNTI.

...

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.



...

## Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

### 8.2.2.31.3 Test purpose

1. To confirm that the UE transits from CELL\_FACH to CELL\_DCH according to the RADIO BEARER RECONFIGURATION message.
2. To confirm that the UE transmits RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC on a dedicated physical channel in a different frequency.

### 8.2.2.31.4 Method of test

#### Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.

UE: PS\_DCCH+DTCH\_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

#### Test Procedure

**Table 8.2.2.31**

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/3.84 MHz	-60	-60	Off	-60
P-CCPCH RSCP (TDD)	dBm	<del>-60</del> <sup>55</sup>	<del>-60</del> <sup>72</sup>	Off	<del>-60</del> <sup>55</sup>

Table 8.2.2.31 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL\_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.2.31. For FDD mode, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER RECONFIGURATION message IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6. For TDD mode, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER RECONFIGURATION message including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CCPCH info" set to cell 6 parameters. The UE shall select cell 6 and then enter CELL\_DCH state according to receiving RADIO BEARER RECONFIGURATION message. Finally the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC. Upon completion of the procedure, the SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state in cell 6.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in CELL_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.2.31.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.2.31.
3		←	RADIO BEARER RECONFIGURATION	Including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6 for FDD mode or IE "Primary CCPCH info" set to cell 6 parameters.
4		→	RADIO BEARER RECONFIGURATION COMPLETE	The UE sends this message on a dedicated physical channel in cell 6.
5		↔	Call C.3	If the test result of C.3 indicates that UE is in CELL_DCH state in cell 6, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 3 for FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL\_DCH from CELL\_FACH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info <a href="#">CHOICE mode</a> - UARFCN uplink(Nu) - UARFCN downlink(Nd) Downlink information for each radio links - Primary CPICH info - Primary Scrambling Code	<a href="#">FDD</a> Same uplink UARFCN as used for cell 6 Same downlink UARFCN as used for cell 6  Set to same code as used for cell 6

RADIO BEARER RECONFIGURATION (Step 3 for TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL\_DCH from CELL\_FACH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info <a href="#">CHOICE mode</a> - UARFCN (Nt) Downlink information for each radio links - Primary CCPCH info - Cell parameters ID	<a href="#">TDD</a> Same UARFCN as used for cell 6  As used for cell 6

8.2.2.31.5 Test requirement

After step 3 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC in cell 6.

After step 4 the UE shall be in CELL\_DCH state in cell 6.

## 8.2.2.32 Radio Bearer Reconfiguration for transition from CELL\_FACH to CELL\_FACH (Frequency band modification): Success

### 8.2.2.32.1 Definition

### 8.2.2.32.2 Conformance requirement

If the UE receives:

-a RADIO BEARER RECONFIGURATION message;

it shall:

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

1> enter a state according to TS25.331 subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

1> handle the message as if IE "RB information to reconfigure" was absent.

If the UE was in CELL\_FACH state upon reception of the reconfiguration message and remains in CELL\_FACH state, the UE shall:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to TS25.304 on that frequency;

2> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

3> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "cell reselection";

3> when the cell update procedure completed successfully:

4> proceed as below.

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

### Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

### 8.2.2.32.3 Test purpose

1. To confirm that the UE transits from CELL\_FACH to CELL\_FACH according to the RADIO BEARER RECONFIGURATION message.
2. To confirm that the UE transmits RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC on a common physical channel in a different frequency.

### 8.2.2.32.4 Method of test

#### Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.

UE: "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS".

Test Procedure

**Table 8.2.2.32**

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/3.84 MHz	-55	-72	Off	-55
P-CCPCH RSCP (TDD)	dBm	-55	-72	Off	-55

Table 8.2.2.32 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 6.

The UE is in CELL\_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.2.32. SS requests operator to make an outgoing call. The SS and UE execute procedure P6. Next The SS and the UE execute procedure P10 and then execute procedure P14. For FDD mode, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER RECONFIGURATION message including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6. For TDD mode, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER RECONFIGURATION message including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CCPCH info" set to cell 6 parameters. The UE shall select cell 6 and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC after it completes configuration according to the received RADIO BEARER RECONFIGURATION message. Upon completion of the procedure, the SS calls for generic procedure C.2 to check that UE is in CELL\_FACH state.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.2.32. SS requests operator to make an outgoing call.
2	←→		SS executes procedure P6 (clause 7.4.2.2.2) specified in TS 34.108.	
3	←→		SS executes procedure P10 (clause 7.4.2.4.2) specified in TS 34.108.	
4	←→		SS executes procedure P14 (clause 7.4.2.6.2) specified in TS 34.108.	
5				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.2.32.
6		←	RADIO BEARER RECONFIGURATION	Including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6 for FDD mode or IE "Primary CCPCH info" set to cell 6 parameters.
7		→	RADIO BEARER RECONFIGURATION COMPLETE	The UE sends this message on a common physical channel in cell 6.
8		←→	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 6) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL\_FACH from CELL\_FACH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info <a href="#">CHOICE mode</a> - UARFCN uplink(Nu) - UARFCN downlink(Nd) Downlink information for each radio links - Primary CPICH info - Primary Scrambling Code	<a href="#">FDD</a> Same uplink UARFCN as used for cell 6 Same downlink UARFCN as used for cell 6  Set to same code as used for cell 6

RADIO BEARER RECONFIGURATION (Step 6) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL\_FACH from CELL\_FACH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info <a href="#">CHOICE mode</a> - UARFCN (Nt) Downlink information for each radio links - Primary CCPCH info - Cell parameters ID	<a href="#">TDD</a> Same UARFCN as used for cell 6  As used for cell 6

#### 8.2.2.32.5 Test requirement

After step 6 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC in cell 6.

After step 7 the UE shall be in CELL\_FACH state of cell 6.

#### 8.2.2.33 Void

#### 8.2.2.34 Radio Bearer Reconfiguration for transition from CELL\_FACH to URA\_PCH (Frequency band modification): Success

##### 8.2.2.34.1 Definition

##### 8.2.2.34.2 Conformance requirement

If the UE receives:

- a RADIO BEARER RECONFIGURATION message;

it shall:

- 1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.
- 1> enter a state according to TS25.331 subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

- 1> handle the message as if IE "RB information to reconfigure" was absent.

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

- 1> transmit a RADIO BEARER RECONFIGURATION COMPLETE on the uplink DCCH using AM RLC, using the old configuration before the state transition.

If after state transition the UE enters URA\_PCH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to TS25.304 on that frequency.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to TS25.304.
- 1> prohibit periodical status transmission in RLC;
- 1> remove any C-RNTI from MAC;
- 1> clear the variable C\_RNTI;
- 1> select Secondary CCPCH according to TS25.331 subclause 8.5.19;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
  - 2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in TS25.331 subclause 8.6.3.2.
- 1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:
  - 2> keep the configuration existing before the reception of the message and transmit a failure response message as specified in TS25.331 subclause 8.2.2.9

- 1> if the UE enters URA\_PCH state, and after cell selection the criteria for URA update caused by "URA reselection" according to subclause TS25.331 8.3.1 is fulfilled:
- 2> initiate a URA update procedure according to TS25.331 subclause 8.3.1 using the cause "URA reselection";
- 2> when the URA update procedure is successfully completed:
- 3> the procedure ends.

## Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

### 8.2.2.34.3 Test purpose

1. To confirm that the UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.
2. To confirm that the UE transits from CELL\_FACH to URA\_PCH according to the RADIO BEARER RECONFIGURATION message.
3. To confirm that the UE selects a common physical channel in a different frequency.

### 8.2.2.34.4 Method of test

## Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 are active

UE: Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

## Test Procedure

**Table 8.2.2.34**

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/3.84 MHz	-55	-72	Off	-55
P-CCPCH RSCP (TDD)	dBm	-55	-72	Off	-55

Table 8.2.2.34 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 6.

The UE is in CELL\_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.2.34. SS requests operator to make an outgoing call. The SS and UE execute procedure P6. Next The SS and the UE execute procedure P10 and then execute procedure P14. For FDD mode, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER RECONFIGURATION message including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6. For TDD mode, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER RECONFIGURATION message including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CCPCH info" set to cell 6 parameters. The UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC and enter URA\_PCH state of cell 6. Upon completion of the procedure, the SS calls for generic procedure C.5 to check that UE is in URA\_PCH state.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	System Information Block type 11	The UE is in idle mode and camped on cell 1. The contents of System Information Block type 11 message are different from the default settings and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.2.34. SS requests operator to make an outgoing call.
2	↔		SS executes procedure P6 (clause 7.4.2.2.2) specified in TS 34.108.	
3	↔		SS executes procedure P10 (clause 7.4.2.4.2) specified in TS 34.108.	
4	↔		SS executes procedure P14 (clause 7.4.2.6.2) specified in TS 34.108.	
5				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.2.34.
6		←	RADIO BEARER RECONFIGURATION	Including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6 for FDD mode or IE "Primary CCPCH info" set to cell 6 parameters.
7		→	RADIO BEARER RECONFIGURATION COMPLETE	The UE transmit this message on the common physical channel. n cell 1.
8				The SS waits for 5 s.
9	↔		CALL C.5	If the test result of C.5 indicates that UE is in URA_PCH state, the test passes, otherwise it fails

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 6) [\(FDD\)](#)

Use the same message sub-type titled "Packet to CELL\_FACH from CELL\_FACH in PS" in [9] TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	3
Frequency info	<a href="#">FDD</a>
<a href="#">CHOICE mode</a>	
- UARFCN uplink (Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink (Nd)	Same downlink UARFCN as used for cell 6
Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 6

RADIO BEARER RECONFIGURATION (Step 6) [\(TDD\)](#)

Use the same message sub-type titled "Packet to CELL\_FACH from CELL\_FACH in PS" in [9] TS 34.108 clause 9 with following exceptions:



Information Element	Value/remark
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	3
Frequency info	
<a href="#">CHOICE mode</a>	<a href="#">TDD</a>
- UARFCN (Nt)	Same UARFCN as used for cell 6
Downlink information for each radio links	
- Primary CCPCH info	
- Cell parameters ID	As used for cell 6

#### 8.2.2.34.5 Test requirement

After step 6 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC in cell 1.

After step 8 the UE shall be in URA\_PCH state in cell 6.

#### 8.2.2.35 Radio Bearer Reconfiguration from CELL\_DCH to CELL\_FACH: Successful channel switching with multiple PS RABs established

##### 8.2.2.35.1 Definition

##### 8.2.2.35.2 Conformance requirement

If the IE "RB information to release" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

- 1> if the IE "RB identity" is set to a value less than 4:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the IE "RB identity" refers to a signalling radio bearer:
  - 2> release the RLC entity for the signalling radio bearer;
  - 2> delete the information about the signalling radio bearer from the variable ESTABLISHED\_RABS.
- 1> if the IE "RB identity" refers to a radio bearer:
  - 2> release the PDCP and RLC entities for that radio bearer;
  - 2> indicate release of the RAB subflow associated with the radio bearer to upper layers;
  - 2> delete the information about the radio bearer from the variable ESTABLISHED\_RABS;
  - 2> when all radio bearers belonging to the same radio access bearer have been released:
    - 3> indicate release of the radio access bearer to upper layers providing the "CN domain identity" together with the "RAB identity" stored in the variable ESTABLISHED\_RABS;
    - 3> delete all information about the radio access bearer from the variable ESTABLISHED\_RABS.

...

If the IE "RB mapping info" is included, the UE shall:

- 1> for each multiplexing option of the RB:
  - 2> if a transport channel that would not exist as a result of the message (i.e. removed in the same message in IE "Deleted DL TrCH information" and IE "Deleted UL TrCH information") is referred to:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> if a multiplexing option that maps a logical channel corresponding to a TM-RLC entity onto RACH, CPCH, FACH or DSCH is included:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.

- 2> if the multiplexing option realises the radio bearer on the uplink (resp. on the downlink) using two logical channels with different values of the IE "Uplink transport channel type" (resp. of the IE "Downlink transport channel type"):
  - 3> set the variable INVALID\_CONFIGURATION to TRUE.
- 2> if that RB is using TM and the IE "Segmentation indication" is set to TRUE and, based on the multiplexing configuration resulting from this message, the logical channel corresponding to it is mapped onto the same transport channel as another logical channel:
  - 3> set the variable INVALID\_CONFIGURATION to TRUE.
- 2> if the transport channel considered in that multiplexing option is different from RACH and if that RB is using AM and the set of RLC sizes applicable to the logical channel transferring data PDUs has more than one element:
  - 3> set the variable INVALID\_CONFIGURATION to TRUE.
- 2> if that RB is using UM or TM and the multiplexing option realises it using two logical channels:
  - 3> set the variable INVALID\_CONFIGURATION to TRUE.
- 2> for each logical channel in that multiplexing option:
  - 3> if the value of the IE "RLC size list" is set to "Explicit list":
    - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value (index) of any IE "RLC size index" in the IE "Explicit list" does not correspond to an "RLC size" in the IE transport format set of that transport channel given in the message; or
    - 4> if the transport channel this logical channel is mapped on in this multiplexing option is different from RACH, and if a "Transport format set" for that transport channel is not included in the same message, and the value (index) of any IE "RLC size index" in the IE "Explicit list" does not correspond to an "RLC size" in the stored transport format set of that transport channel; or
    - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value of any IE "Logical channel list" in the transport format set is not set to "Configured"; or
    - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and the value of any IE "Logical channel list" in the stored transport format set of that transport channel is not set to "Configured":
      - 5> set the variable INVALID\_CONFIGURATION to TRUE.
  - 3> if the value of the IE "RLC size list" is set to "All":
    - 4> if the transport channel this logical channel is mapped on is RACH; or
    - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value of any IE "Logical channel list" in the transport format set is not set to "Configured"; or
    - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and the value of any IE "Logical channel list" in the stored transport format set of that transport channel is not set to "Configured":
      - 5> set the variable INVALID\_CONFIGURATION to TRUE.
  - 3> if the value of the IE "RLC size list" is set to "Configured":
    - 4> if the transport channel this logical channel is mapped on is RACH; or

- 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and for none of the RLC sizes defined for that transport channel in the "Transport format set", the "Logical Channel List" is set to "All" or given as an "Explicit List" which contains this logical channel; or
  - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and for none of the RLC sizes defined in the transport format set stored for that transport channel, the "Logical Channel List" is set to "All" or given as an "Explicit List" which contains this logical channel:
  - 5> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if, as a result of the message this IE is included in, several radio bearers can be mapped onto the same transport channel, and the IE "Logical Channel Identity" was not included in the RB mapping info of any of those radio bearers for a multiplexing option on that transport channel or the same "Logical Channel Identity" was used more than once in the RB mapping info of those radio bearers for the multiplexing options on that transport channel:
    - 2> set the variable INVALID\_CONFIGURATION to TRUE.
  - 1> delete all previously stored multiplexing options for that radio bearer;
  - 1> store each new multiplexing option for that radio bearer;
  - 1> if the IE "Uplink transport channel type" is set to the value "RACH":
    - 2> refer the IE "RLC size index" to the RACH Transport Format Set of the first PRACH received in the IE "PRACH system information list" received in System Information Block type 5 or System Information Block type 6.
  - 1> determine the sets of RLC sizes that apply to the logical channels used by that RB, based on the IEs "RLC size list" and/or the IEs "Logical Channel List" included in the applicable "Transport format set" (either the ones received in the same message or the ones stored if none were received); and
  - 1> in case the selected multiplexing option is a multiplexing option on RACH:
    - 2> ignore the RLC size indexes that do not correspond to any RLC size within the Transport Format Set stored for RACH.
  - 1> if RACH is the transport channel to be used on the uplink, if that RB has a multiplexing option on RACH and if it is using AM:
    - 2> apply the largest size amongst the ones derived according to the previous bullet for the RLC size (or RLC sizes in case the RB is realised using two logical channels) for the corresponding RLC entity.
- NOTE: The IE "RB mapping info" is only included in IE "Predefined RB configurations" in system information when used for Inter-RAT handover to UTRAN and there is no AM RLC size change involved in this case.
- 1> if that RB is using AM and the RLC size applicable to the logical channel transporting data PDUs is different from the one derived from the previously stored configuration:
    - 2> re-establish the corresponding RLC entity;
    - 2> configure the corresponding RLC entity with the new RLC size;
    - 2> for each AM RLC radio bearer in the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS whose RLC size is changed; and
    - 2> for each AM RLC signalling radio bearer in the CN domain as indicated in the IE "CN domain identity" in the variable LATEST\_CONFIGURED\_CN\_DOMAIN whose RLC size is changed:
      - 3> if the IE "Status" in the variable CIPHERING\_STATUS of this CN domain is set to "Started":
        - 4> if this IE was included in CELL UPDATE CONFIRM:

5> set the HFN values for the corresponding RLC entity equal to the value of the IE "START" included in the latest transmitted CELL UPDATE message for this CN domain.

4> if this IE was included in a reconfiguration message:

5> set the HFN values for the corresponding RLC entity equal to the value of the IE "START" that will be included in the reconfiguration complete message for this CN domain.

1> if that RB is using UM:

2> indicate the largest applicable RLC size to the corresponding RLC entity.

1> configure MAC multiplexing according to the selected multiplexing option (MAC multiplexing shall only be configured for a logical channel if the transport channel it is mapped on according to the selected multiplexing option is the same as the transport channel another logical channel is mapped on according to the multiplexing option selected for it);

1> configure the MAC with the logical channel priorities according to selected multiplexing option;

1> configure the MAC with the set of applicable RLC Sizes for each of the logical channels used for that RB;

1> if there is no multiplexing option applicable for the transport channels to be used in the RRC state indicated in the IE "RRC State Indicator" included in the received message:

2> set the variable INVALID\_CONFIGURATION to TRUE.

1> if there is more than one multiplexing option applicable for the transport channels to be used in the RRC state indicated in the IE "RRC State Indicator" included in the received message:

2> set the variable INVALID\_CONFIGURATION to TRUE.

In case IE "RLC info" includes IE "Downlink RLC mode " ("DL RLC logical channel info" is mandatory present) but IE "Number of downlink RLC logical channels" is absent in the corresponding IE "RB mapping info", the parameter values are exactly the same as for the corresponding UL logical channels. In case two multiplexing options are specified for the UL, the first options shall be used as default for the DL. As regards the IE "Channel type", the following rule should be applied to derive the DL channel type from the UL channel included in the IE:

Channel used in UL	DL channel type implied by "same as"
DCH	DCH
RACH	FACH
CPCH	FACH
USCH	DSCH

If ciphering is applied, UTRAN should not map Transparent Mode RBs of different CN domains on the same transport channel. In such case the UE behaviour is not specified.

#### Reference

3GPP TS 25.331 clause 8.6.4.6, 8.6.4.8.

8.2.2.35.3 Test purpose

To confirm that the UE transit from CELL\_DCH to CELL\_FACH state according to a RADIO BEARER RECONFIGURATION message when having two radio access bearers established.

To confirm that the UE transit from CELL\_FACH to CELL\_DCH state according to a RADIO BEARER RECONFIGURATION message when having two radio access bearers established.

To confirm that the UE release two radio access bearers included in a single RADIO BEARER RELEASE message.

8.2.2.35.4 Method of test

#### Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH + DTCH\_DCH (state 6-10) as specified in clause 7.4 of TS 34.108

Related ICS/IXIT statements

Support of PS service Yes/No  
 Secondary PDP context activation procedure Yes/No

Test Procedure

The UE is in CELL\_DCH state of cell 1. The UE initiates the activation of a second PDP context, upon which the SS establishes a PS domain RAB and confirms the PDP context activation.

Next, the SS transmits a RADIO BEARER RECONFIGURATION message to move the UE to CELL\_FACH state. The UE shall apply the new configuration and return the RADIO BEARER RECONFIGURATION COMPLETE message.

The SS will then transmit a RADIO BEARER RECONFIGURATION message to move the UE to CELL\_DCH state. The UE shall apply the new configuration and return the RADIO BEARER RECONFIGURATION COMPLETE message.

A DEACTIVATE PDP CONTEXT REQUEST message is then sent by the SS to request the UE to deactivate both PDP contexts. The UE shall reply with a DEACTIVATE PDP CONTEXT ACCEPT message. After this procedure, the SS transmits a RADIO BEARER RELEASE. The UE shall release both radio bearers and transmit a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of UE is in CELL_DCH state of cell 1.
2		→	UPLINK DIRECT TRANSFER (ACTIVATE SECONDARY PDP CONTEXT REQUEST)	SM
3		←	RADIO BEARER SETUP	Establishment of second PS domain RAB
4		→	RADIO BEARER SETUP COMPLETE	
5		←	DOWNLINK DIRECT TRANSFER (ACTIVATE SECONDARY PDP CONTEXT ACCEPT)	SM
6		←	RADIO BEARER RECONFIGURATION	To move the UE to CELL_FACH/URA_PCH. RB reconfiguration procedure is used to: <ul style="list-style-type: none"> <li>• Modify RLC timer values</li> </ul> The message includes a C-RNTI and the Primary Scrambling code of cell 1.
7		→	RADIO BEARER RECONFIGURATION COMPLETE	
8		←	RADIO BEARER RECONFIGURATION	To move the UE to CELL_DCH. RB reconfiguration procedure is used to: <ul style="list-style-type: none"> <li>• Re- specify the DCH configuration (don't re- use stored multiplexing option)</li> <li>• Modify RLC timer values</li> </ul>
9		→	RADIO BEARER RECONFIGURATION COMPLETE	
10		←	DEACTIVATE PDP CONTEXT REQUEST	Request a deactivation both PDP contexts
11		→	DEACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context deactivation
12		←	RADIO BEARER RELEASE	Release of two PS domain RABs
13		→	RADIO BEARER RELEASE COMPLETE	

For Steps 2, 3, 4, 5 see also Test Case 12.9.13 "Service Request / RAB re-establishment / UE initiated / multiple PDP contexts" for additional details.

## Specific Message Contents

### RADIO BEARER SETUP (Step 3)

The contents of RADIO BEARER SETUP message in this test case are identical the message sub-type indicated by "Packet to CELL\_DCH from CELL\_DCH in PS" in [9] TS 34.108 clause 9, with the following exception :

Information Element	Value/remark
RAB information for setup - RAB identity	0000 0101B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
RB information to setup - RB identity	21

### RADIO BEARER RECONFIGURATION (Step 6) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL\_FACH from CELL\_DCH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B
RB information to reconfigure list	
- RB information to reconfigure	
- RB identity	20
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Timer_RST	700
- Max_RST	6
- RB information to reconfigure	
- RB identity	21
- Timer_RST	700
- Max_RST	6
Downlink information per radio link list	
-Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 1

### RADIO BEARER RECONFIGURATION (Step 6) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL\_FACH from CELL\_DCH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B
RB information to reconfigure list	
- RB information to reconfigure	
- RB identity	20
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Timer_RST	700
- Max_RST	6
- RB information to reconfigure	
- RB identity	21
- Timer_RST	700
- Max_RST	6
Downlink information per radio link list	
-Downlink information for each radio link	
- Primary CCPCH info	Set to same as used for cell 1

## RADIO BEARER RECONFIGURATION (Step 8) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL\_DCH from CELL\_FACH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B
RB information to reconfigure list	
- RB information to reconfigure	
- RB identity	20
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	Not Present
- CHOICE RLC size list	Configured
- MAC logical channel priority	6
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	21
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	



- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB mapping info	
- Information for each multiplexing option	
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	Not Present
- CHOICE RLC size list	Configured
- MAC logical channel priority	6
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	Not Present
Downlink information per radio link list	
-Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 1

#### RADIO BEARER RECONFIGURATION (Step 8) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL\_DCH from CELL\_FACH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B
RB information to reconfigure list	
- RB information to reconfigure	
- RB identity	20
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	Not Present
- CHOICE RLC size list	Configured
- MAC logical channel priority	6
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	21
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	

- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB mapping info	Not Present
- Information for each multiplexing option	Not Present
- RLC logical channel mapping indicator	1
- Number of uplink RLC logical channels	DCH
- Uplink transport channel type	1
- UL Transport channel identity	Not Present
- Logical channel identity	Configured
- CHOICE RLC size list	6
- MAC logical channel priority	6
- Downlink RLC logical channel info	1
- Number of downlink RLC logical channels	DCH
- Downlink transport channel type	6
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	Not Present
Downlink information per radio link list	
-Downlink information for each radio link	
- Primary CCPCH info	Set to same as used for cell 1

#### RADIO BEARER RELEASE (Step 12)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by " Contents of RADIO BEARER RELEASE message: AM or UM " in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
RB information to release	
- RB identity	20
RB information to release	
- RB identity	21

#### 8.2.2.35.5 Test requirement

After step 3 the UE shall transmit a RADIO BEARER SETUP COMPLETE message.  
After step 6 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.  
After step 7 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.  
After step 12 the UE shall transmit a RADIO BEARER RELEASE COMPLETE message.

CR-Form-v7	
<b>CHANGE REQUEST</b>	
⌘ <b>34.123-1 CR 613</b> ⌘ rev <b>1</b> ⌘	Current version: <b>5.5.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correction of references for section 18, RAB testing of TDD 1.28 Mcps option		
<b>Source:</b>	⌘ Siemens AG		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 24/10/2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <i>one</i> of the following categories:		Use <i>one</i> of the following releases:
	<b>F</b> (correction)	<b>2</b> (GSM Phase 2)	
	<b>A</b> (corresponds to a correction in an earlier release)	<b>R96</b> (Release 1996)	
	<b>B</b> (addition of feature),	<b>R97</b> (Release 1997)	
	<b>C</b> (functional modification of feature)	<b>R98</b> (Release 1998)	
	<b>D</b> (editorial modification)	<b>R99</b> (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<b>Rel-4</b> (Release 4)
			<b>Rel-5</b> (Release 5)
			<b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ Some references to other clauses in TS 34.123-1 must be corrected.		
<b>Summary of change:</b>	⌘ References corrected for:		
	18.1.1.1	Generic radio bearer test procedure for Single RB configuration	
	18.1.1.2	Generic test procedure for testing multi-RB configuration and simultaneous signalling	
<b>Consequences if not approved:</b>	⌘ TDD option could not be tested properly		

<b>Clauses affected:</b>	⌘ 18										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> </table>	Y	N							Other core specifications	⌘
Y	N										
		Test specifications									
		O&M Specifications									
<b>Other comments:</b>	⌘ CR presented due to e-mail from Nokia received. Revision of T1-031424, including CR number										

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version,

look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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## 18 Multi-Layer Functional Tests

The present clause specifies the multi-layer functional test cases that are not covered by the interoperability radio bearer test cases in clause 14 or by any other test cases in the present document.

### 18.1 Radio Bearer Tests for 1.28 Mcps TDD option

#### 18.1.1 General information for radio bearer tests (1.28 Mcps TDD)

The purpose of these radio bearer test cases is to test properly the Reference Radio Bearer configurations included in TS34.108 [9], clause 6.11 for 1.28 Mcps TDD option.

The applicability of radio bearer tests is dependent on the UE uplink and downlink radio access capabilities and UE support tele- and bearer-services. See TS 34.123-2, annex B for applicability of the specific test cases.

The test procedure for radio bearer for 1.28Mcps option is identical to generic radio bearer test procedure in chap 14.

14.1.1.1 Generic radio bearer test procedure for Single RB configuration is used for generic radio bearer test procedure for single RB configuration of 1.28 Mcps TDD option.

14.1.1.2 Generic test procedure for testing multi-RB combination and simultaneous signalling is used for generic test procedure for testing multi-RB combination and simultaneous signalling of 1.28 Mcps TDD option.

##### 18.1.1.1 Generic radio bearer test procedure for Single RB configuration

| See 14.1.1.~~1~~ for test procedure

##### 18.1.1.2 Generic test procedure for testing multi-RB configuration and simultaneous signalling

| See ~~14~~4.1.~~1~~.~~2~~ for test procedure

## CHANGE REQUEST

⌘ **34.123-1 CR 626** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections to P1 Test cases 8.3.4.1 and 8.4.1.1		
<b>Source:</b>	⌘ MCC 160		
<b>Work item code:</b>	⌘ MISTST1	<b>Date:</b>	⌘ 22-10-2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ <b>R5</b>
Use <u>one</u> of the following categories: <i>F</i> (correction) <i>A</i> (corresponds to a correction in an earlier release) <i>B</i> (addition of feature), <i>C</i> (functional modification of feature) <i>D</i> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)	

<b>Reason for change:</b>	⌘ 8.3.4.1 <ul style="list-style-type: none"><li>As per default contents of SIB 11 in 34.108, for Active cells IE 'Cell synchronisation information reporting indicator' is set as FALSE. As Cell b in step 5a is in active cell List, will not report 'Cell synchronisation information reporting indicator' in Measurement report.</li></ul> 8.4.1.1 <ul style="list-style-type: none"><li>After step 10a of expected sequence, UE has 3 (cell 1,2 &amp;3) in the neighbouring cell list, and hence in Measurement report of step 10b all the 3 configured cells will be reported.</li></ul>
<b>Summary of change:</b>	⌘ 8.3.4.1 <ul style="list-style-type: none"><li>In specific message contents of step 5a, changed the reporting of IE 'Cell synchronisation information' as absent.</li></ul> 8.4.1.1. <ul style="list-style-type: none"><li>In specific message contents of step 10b, added cell 1 in measured results.</li></ul>
<b>Consequences if not approved:</b>	⌘ A conformant UE may fail the test case

<b>Clauses affected:</b>	⌘ 8.3.4.1 & 8.4.1.1
--------------------------	---------------------

<b>Other specs Affected:</b>	⌘	<table border="1"><tr><td>Y</td><td>N</td></tr><tr><td></td><td>X</td></tr><tr><td></td><td>X</td></tr><tr><td></td><td>X</td></tr></table>	Y	N		X		X		X	Other core specifications	⌘	
	Y	N											
		X											
	X												
	X												
		Test specifications											
		O&M Specifications											
<b>Other comments:</b>	⌘	Affects R99, REL-4, REL-5.											

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Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.



### 8.3.4.1 Active set update in soft handover: Radio Link addition

#### 8.3.4.1.1 Definition

#### 8.3.4.1.2 Conformance requirement

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified otherwise in the following. The UE shall:

- 1> first add the RLs indicated in the IE "Radio Link Addition Information";
- 1> perform the physical layer synchronisation procedure B as specified in TS 25.214;
- 1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronization B, specified in TS 25.214;

...

#### Reference

3GPP TS 25.331 clause 8.3.4

#### 8.3.4.1.3 Test purpose

1. To confirm that the UE continues to communicate with the SS on both the additional radio link and an already existing radio link after the radio link addition.

#### 8.3.4.1.4 Method of test

#### Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active

UE: CS-DCCH+DTCH\_DCH (state 6-9) or PS-DCCH+DTCH\_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

#### Test Procedure

**Table 8.3.4.1**

Parameter	Unit	Cell 1				Cell 2			
		T0	T1	T2	T3	T0	T1	T2	T3
UTRA RF Channel Number		Ch. 1				Ch. 1			
CPICH Ec	dBm/3.84 MHz	-60	-60	OFF	-60	-75	-60	-60	OFF

Table 8.3.4.1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

Initially, the UE goes to connected mode and establishes a radio access bearer in CELL\_DCH state in cell 1.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.1. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID).

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC without waiting for the physical channel synchronisation B.

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.1. UE shall not detect the DPCH from cell 1 but continue to communicate through the another DPCH from cell 2. The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 1.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 2. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

The SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.1. UE shall detect DPCH from cell 1, but not detect the DPCH from cell 2, but continue to communicate through DPCH from cell 1. The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 2.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 1. The UE shall transmit a UE CAPABILITY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.1.
2		→	MEASUREMENT REPORT	See specific message contents for this message

3	←	ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information". (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID in cell 2)
4	→	ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link to cell 2, without interfering with existing connections on the radio link in cell 1.
5			SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.1
5a	→	MEASUREMENT REPORT	See specific message contents for this message
6	←	UE CAPABILITY ENQUIRY	Use default message.
7	→	UE CAPABILITY INFORMATION	Use default message.
8	←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
9		Void	
9a		Void	
10			SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.1
10a	→	MEASUREMENT REPORT	See specific message contents for this message
11	←	UE CAPABILITY ENQUIRY	Use default message.
12	→	UE CAPABILITY INFORMATION	Use default message.
13	←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
14	↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

#### Specific Message Content

The contents of SIB11 broadcasted in cell 1 shall be in accordance with the default SIB11 as specified in section 6.1 of TS 34.108.

The contents of SIB12 in cell 1, and SIB11 and SIB12 in cell 2 shall be in accordance with the default SIBs as specified in TS 34.108.

## MEASUREMENT REPORT (Step 2)

Information Element	Value/remark
<p>Message Type</p> <p>Integrity check info</p> <ul style="list-style-type: none"> <li>- Message authentication code</li> </ul> <p>- RRC Message sequence number</p> <p>Measurement identity</p> <p>Measured Results</p> <ul style="list-style-type: none"> <li>- Intra-frequency measured results</li> <li>- Cell measured results <ul style="list-style-type: none"> <li>- Cell Identity</li> <li>- Cell synchronisation information</li> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> </ul> </li> <li>- CPICH Ec/N0</li> <li>- CPICH RSCP</li> <li>- Pathloss</li> <li>- Cell measured results <ul style="list-style-type: none"> <li>- Cell Identity</li> <li>- Cell synchronisation information</li> </ul> </li> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> <li>- CPICH Ec/N0</li> <li>- CPICH RSCP</li> <li>- Pathloss</li> </ul> <p>Measured results on RACH</p> <p>Additional measured results</p> <p>Event results</p> <ul style="list-style-type: none"> <li>- Intra-frequency measurement event results <ul style="list-style-type: none"> <li>- Intra-frequency event identity</li> <li>- Cell measurement event results <ul style="list-style-type: none"> <li>- Primary CPICH info</li> <li>- Primary scrambling code</li> </ul> </li> </ul> </li> </ul>	<p>This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.</p> <p>This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.</p> <p>1</p> <p>Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is absent</p> <p>Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is present</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is present and includes IE COUNT-C-SFN frame difference</p> <p>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is present</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is absent</p> <p>1a</p> <p>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108</p>

### ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Radio link addition information - Primary CPICH Info - Primary Scrambling Code  - Downlink DPCH info for each RL - CHOICE mode - Primary CPICH usage for channel estimation - DPCH frame offset  - Secondary CPICH info - DL channelisation code  - Secondary scrambling code - Spreading factor  - Code Number  - Scrambling code change - TPC Combination Index - SSDT Cell Identity - Close loop timing adjustment mode - TFCI Combining Indicator - SCCPCH information for FACH	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108  FDD P-CPICH can be used. Calculated value from Cell synchronisation information Not Present This IE is repeated for all existing downlink DPCHs allocated to the UE 1 Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets" For each DPCH, assign the same code number in the current code given in cell 1. Not Present 0 Not Present Not Present Not Present Not Present

### MEASUREMENT REPORT (Step 5a)

Information Element	Value/remark
Message Type Integrity check info - Message authentication code  - RRC Message sequence number  Measurement identity Measured Results - Intra-frequency measured results - Cell measured results - Cell Identity - Cell synchronisation information  - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss  Measured results on RACH Additional measured results Event results - Intra-frequency measurement event results - Intra-frequency event identity - Cell measurement event results - Primary CPICH info - Primary scrambling code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. 1  Checked that this IE is absent <del>Checked that this IE is present and includes IE-COUNT-C-SFN frame difference</del> <u>Checked that this IE is absent</u>  Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent Checked that this IE is absent Checked that this IE is absent  1b  Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108



- 1> begin or continue monitoring the list of cells assigned in the IE "intra-frequency cell info list" in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11);
- 1> if the "intra-frequency measurement reporting criteria" IE was included in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11):
  - 2> begin measurement reporting according to the IE.

In CELL\_DCH state, the UE shall:

- 1> transmit a MEASUREMENT REPORT message on the uplink DCCH when the reporting criteria stored in variable MEASUREMENT\_IDENTITY are met for any ongoing measurements that are being performed in the UE.

...

The reporting criteria are fulfilled if either:

- the first measurement has been completed for a newly initiated measurement with periodic reporting; or
- the time period indicated in the stored IE "Periodical reporting criteria" has elapsed since the last measurement report was submitted to lower layers for a given measurement; or
- an event in stored IE "Measurement reporting criteria" was triggered.

For the measurement, which triggered the MEASUREMENT REPORT message, the UE shall:

- 1> set the IE "measurement identity" to the measurement identity, which is associated with that measurement in variable MEASUREMENT\_IDENTITY;
- 1> set the IE "measured results" to include measurements according to the IE "reporting quantity" of that measurement stored in variable MEASUREMENT\_IDENTITY; and
  - 2> if all the reporting quantities are set to "false":
    - 3> not set the IE "measured results".
- 1> set the IE "Measured results" in the IE "Additional measured results" according to the IE "reporting quantity" for all measurements associated with the measurement identities included in the "Additional measurements list" stored in variable MEASUREMENT\_IDENTITY of the measurement that triggered the measurement report; and
  - 2> if more than one additional measured results are to be included:
    - 3> include only the available additional measured results, and sort them in ascending order according to their IE "measurement identity" in the MEASUREMENT REPORT message.
- 1> if the MEASUREMENT REPORT message was triggered by an event (i.e. not a periodical report):

...

The UE shall:

- 1> transmit the MEASUREMENT REPORT message on the uplink DCCH using either AM or UM RLC according to the stored IE "measurement reporting mode" associated with the measurement identity that triggered the report.

When the MEASUREMENT REPORT message has been submitted to lower layers for transmission:

- 1> the procedure ends.

...

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in TS 25.331 subclause 8.6 unless otherwise specified below.

The UE shall:

- 1> read the IE "Measurement command";
- 1> if the IE "Measurement command" has the value "setup":
  - 2> store this measurement in the variable MEASUREMENT\_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
  - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement":  
...
  - 2> for measurement type "UE positioning measurement":  
...
  - 2> for any other measurement type:
    - 3> if the measurement is valid in the current RRC state of the UE:
      - 4> begin measurements according to the stored control information for this measurement identity.
- 1> if the IE "Measurement command" has the value "modify":
  - 2> for all IEs present in the MEASUREMENT CONTROL message:
    - 3> if a measurement was stored in the variable MEASUREMENT\_IDENTITY associated to the identity by the IE "measurement identity":
      - 4> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:  
...
      - 4> for any other measurement type:
        - 5> replace the corresponding information stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;
        - 5> resume the measurements according to the new stored measurement control information.
    - 3> otherwise:
      - 4> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
  - 2> for all optional IEs that are not present in the MEASUREMENT CONTROL message:
    - 3> leave the currently stored information elements unchanged in the variable MEASUREMENT\_IDENTITY if not stated otherwise for that IE.
- 1> if the IE "measurement command" has the value "release":  
...
- 1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;



If the IE "Reporting Cell Status" is not received for intra-frequency, inter-frequency measurement, or inter-RAT measurement, the UE shall:

- 1> for intra-frequency measurement, inter-frequency measurement and inter-RAT measurement:
- 2> exclude the IE "Measured Results" in MEASUREMENT REPORT.

**Reference**

3GPP TS 25.331 clause 8.4.1.8.1, 8.4.1.3, 8.4.2.2, 8.6.7.9.

**8.4.1.1.3 Test Purpose**

1. To confirm that the UE continues to monitor intra-frequency measurement quantity of the cells listed in System Information Block type 11 or 12 messages, after it has entered CELL\_DCH state from idle mode. When the intra-frequency measurement reporting criteria specified in System Information Block type 11 or 12 messages have been met, it shall report the measurements using MEASUREMENT REPORT message(s).
2. To confirm that the UE terminates monitoring and reporting activities for the cells listed in "intra-frequency cell info list" IE in System Information Block type 11 or 12 messages, after it has received a MEASUREMENT CONTROL message that specifies the measurement type to be "intra-frequency measurement" with the same measurement identity as in System Information Block Type 11 or 12 messages. To confirm that the UE reconfigures the monitoring and reporting activities based on the last MEASUREMENT CONTROL message received.

**8.4.1.1.4 Method of test**

**Initial Condition**

System Simulator: 3 cells – Cell 1, Cell 2 and Cell 3 are active.

UE: "Registered idle mode on CS" (state 2) or "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

**Test Procedure**

Table 8.4.1.1-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1" and "T2" are to be applied subsequently. The exact instants on which these values shall be applied are described in the texts in this clause.

**Table 8.4.1.1-1**

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Ch. 1			Ch. 1			Ch.1		
CPICH Ec	dBm/3.84 MHz	-60	-60	-60	-70	-60	-80	-80	-60	-60

The UE is initially in idle mode and has selected cell 1 for camping. The System Information Block type 11 messages are modified with respect to the default settings. The key measurement parameters in the modified System Information Block message are as follow: report criteria = "periodic reporting criteria", reporting interval = "64 seconds".

SS prompts the operator to make an outgoing call of a supported traffic class. SS and UE shall execute procedure P3 (for CS service) or P5 (for PS service). Next SS and

UE shall execute procedure P7 (for CS service) or P9 (for PS service). Then SS and UE shall execute procedure P11 (for CS service) or P13 (for PS service). The UE shall send a MEASUREMENT REPORT message after reaching CELL\_DCH state, reporting cell 2's CPICH RSCP value. After 64 seconds has passed since SS receives the first MEASUREMENT REPORT message, the UE shall transmit a second MEASUREMENT REPORT message.

Note: In P11 or P13 in step 4, in RADIO BEARER SETUP message, IE "Default DPCH Offset Value" and IE "DPCH frame offset" are set to "0".

SS sends a MEASUREMENT CONTROL message on the downlink DCCH. In this message, SS configures an intra-frequency measurement based on the measurement quantity CPICH RSCP. Parameters used in this message are: measurement identity = "1", report criteria = "event-trigger", event identity = "1e", reporting threshold = "-70 dBm". SS checks to see that no MEASUREMENT REPORT messages are sent within the next 64 seconds (which is due to periodic reporting). SS reconfigures the downlink transmission power settings according to values in column "T1" in table 8.4.1.1-1. The UE shall transmit a MEASUREMENT REPORT message when it detects that the CPICH RSCP of cell 3 has risen above the threshold value specified in the previous MEASUREMENT CONTROL message.

SS sends then a new MEASUREMENT CONTROL message to add cell 2 to the list of the cells the UE shall measure. Since the RSCP for cell 2 is above the threshold for event 1e to be triggered, a MEASUREMENT REPORT triggered by cell 2 shall be sent by the UE.

SS reconfigures the downlink transmission power settings according to values in column "T2" in table 8.4.1.1-1. SS sends a new MEASUREMENT CONTROL message on the downlink DCCH. In this message, SS configures an intra-frequency measurement based on the measurement quantity CPICH RSCP. Parameters used in this message are:

measurement identity = "1", report criteria = "event-trigger", event identity = "1a", Reporting range 8db. SS reconfigures the downlink transmission power settings according to values in column "T1" in table 8.4.1.1-1. The UE shall transmit a MEASUREMENT REPORT message when it detects that the condition for event 1a is fulfilled. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

#### Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	System Information Block type 11	The UE is in idle mode and camped onto cell 1. The System Information Block type 11 messages to be transmitted are different from the default settings (see specific message contents)
2		↔	SS executes procedure P3 (clause 7.4.2.1.2) or P5 (clause 7.4.2.2.2) specified in TS 34.108.	
3		↔	SS executes procedure P7 (clause 7.4.2.3.2) or P9 (clause 7.4.2.4.2) specified in TS 34.108.	
4		↔	SS executes procedure P11 (clause 7.4.2.5.2) or P13 (clause 7.4.2.6.2) specified in TS 34.108.	IE "Default DPCH Offset Value" and IE "DPCH frame offset" in RADIO BEARER SETUP message is set to "0".

Step	Direction		Message	Comment
	UE	SS		
5	SS			SS shall wait for a MEASUREMENT REPORT message.
6	→		MEASUREMENT REPORT	After receiving this message, SS shall expect to receive the next MEASUREMENT REPORT message after 64 seconds.
6a	→		MEASUREMENT REPORT	SS shall receive consecutive MEASUREMENT REPORT messages at 64 seconds interval.
7	←		MEASUREMENT CONTROL	A measurement with "measurement identity" IE set to "1" is assigned, with the IE "CHOICE reporting criteria" set to "intra-frequency measurement reporting criteria". See specific message content for the rest of the message.
8				SS waits for 64 seconds and verifies that no further MEASUREMENT REPORT messages are detected on the uplink DCCH.
9				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.1-1.
10	→		MEASUREMENT REPORT	SS verifies that UE transmits a MEASUREMENT REPORT message triggered by cell 3 and containing report the measured CPICH RSCP value of cell 3.
10a	←		MEASUREMENT CONTROL	A MEASUREMENT CONTROL is sent to the UE to modify the list of the cells the UE shall monitor.
10b	→		MEASUREMENT REPORT	SS verifies that UE transmits a MEASUREMENT REPORT message triggered by cell 2.
11				SS re-adjusts the downlink transmission power settings according to columns "T2" in table 8.4.1.1-2.
12	←		MEASUREMENT CONTROL	A measurement with "measurement identity" IE set to "1" is assigned, with the IE "CHOICE reporting criteria" set to "intra-frequency measurement reporting criteria". See specific message content for the rest of the message.
13				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.1-3 and waits 5 seconds.

Step	Direction		Message	Comment
	UE	SS		
14	→		MEASUREMENT REPORT	SS verifies that UE transmits a MEASUREMENT REPORT message to report occurrence of event 1a.
15	↔		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

#### Specific Message Contents

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

System Information Block type 11 (Step 1)

Use the same System Information Block Type 11 message as found in clause 6.1.0b of TS 34.108, with the following exceptions:

Information Element	Value/remark
<p>Measurement control system information</p> <ul style="list-style-type: none"> <li>- Intra-frequency measurement system information <ul style="list-style-type: none"> <li>- Intra-frequency measurement identity</li> </ul> </li> <li>- Intra-frequency cell info list <ul style="list-style-type: none"> <li>- CHOICE intra-frequency cell removal</li> </ul> </li> <li>- New intra-frequency cells <ul style="list-style-type: none"> <li>- Intra-frequency cell id</li> <li>- Cell info <ul style="list-style-type: none"> <li>- Cell individual offset</li> </ul> </li> </ul> </li> <li>- Reference time difference to cell</li> <li>- Read SFN Indicator</li> <li>- CHOICE Mode</li> <li>- Primary CPICH Info <ul style="list-style-type: none"> <li>- Primary Scrambling Code</li> </ul> </li> <li>- Primary CPICH TX power</li> <li>- TX Diversity Indicator</li> <li>- Cell selection and Re-selection</li> <li>- Intra-frequency cell id</li> <li>- Cell info <ul style="list-style-type: none"> <li>- Cell individual offset</li> </ul> </li> <li>- Reference time difference to cell</li> <li>- Read SFN Indicator</li> <li>- CHOICE Mode</li> <li>- Primary CPICH Info <ul style="list-style-type: none"> <li>- Primary Scrambling Code</li> </ul> </li> <li>- Primary CPICH TX power</li> <li>- TX Diversity Indicator</li> <li>- Cell selection and Re-selection info</li> <li>- Reporting information for state CELL_DCH <ul style="list-style-type: none"> <li>- Intra-frequency reporting quantity <ul style="list-style-type: none"> <li>- Reporting quantities for active set cells</li> <li>- Cell synchronisation information reporting indicator <ul style="list-style-type: none"> <li>- Cell identity reporting indicator</li> <li>- CHOICE mode</li> <li>- CPICH Ec/No reporting indicator</li> <li>- CPICH RSCP reporting indicator</li> <li>- Pathloss reporting indicator</li> <li>- Reporting quantities for monitored set cells</li> <li>- Cell synchronisation information reporting indicator <ul style="list-style-type: none"> <li>- Cell identity reporting indicator</li> <li>- CHOICE mode</li> <li>- CPICH Ec/No reporting indicator</li> <li>- CPICH RSCP reporting indicator</li> <li>- Pathloss reporting indicator</li> </ul> </li> </ul> </li> <li>- Measurement Reporting Mode</li> <li>- Measurement Report Transfer Mode</li> <li>- Periodical Reporting / Event Trigger Reporting Mode <ul style="list-style-type: none"> <li>- CHOICE report criteria</li> <li>- Amount of reporting</li> <li>- Reporting interval</li> </ul> </li> </ul> </li> </ul> </li></ul>	<p>Not Present Absence of this IE is equivalent to default value 1</p> <p>Not present (This IE shall be ignored by the UE for SIB11)</p> <p>1</p> <p>Not present Absence of this IE is equivalent to default value 0 dB</p> <p>Not Present TRUE FDD</p> <p>Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS 34.108</p> <p>Not Present FALSE</p> <p>Not Present (The IE shall be absent as this is the serving cell) 2</p> <p>Not present Absence of this IE is equivalent to default value 0dB</p> <p>1024 TRUE FDD</p> <p>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4 of TS 34.108</p> <p>Not Present FALSE</p> <p>Not present For neighbouring cell, if HCS is not used and all the parameters in cell selection and re-selection info are Default value, this IE is absent.</p> <p>FALSE</p> <p>FALSE FDD FALSE FALSE FALSE</p> <p>FALSE</p> <p>FALSE FDD FALSE TRUE FALSE</p> <p>Acknowledged mode RLC Periodical reporting</p> <p>Periodic reporting criteria Infinity 64 seconds</p>

MEASUREMENT REPORT (Step 6 and 6a)

Information Element	Value/remark
Measurement identity Measured Results <ul style="list-style-type: none"> <li>- CHOICE measurement</li> <li>- Intra-frequency measurement results</li> <li>- Cell measured results                             <ul style="list-style-type: none"> <li>- Cell Identity</li> <li>- Cell synchronisation information</li> <li>- Primary CPICH Info</li> <li>- Primary Scrambling Code</li> <li>- CPICH Ec/No</li> <li>- CPICH RSCP</li> </ul> </li> <li>- Pathloss</li> </ul> Measured Results on RACH Additional Measured results Event Results	Check to see if set to 1  Check to see if set to "Intra-frequency measured results list"  Check to see if it is absent Check to see if this IE is absent  Check to see if it's the same code for cell 2 Check to see if this IE is absent "Checked to see if set to within an acceptable range" Check to see if this IE is absent Check to see if this IE is absent Check to see if this IE is absent Check to see if this IE is absent

## MEASUREMENT CONTROL (Step 7)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency measurement objects list	
- CHOICE intra-frequency cell removal	Remove all intra-frequency cells
- New intra-frequency cells	2 new intra-frequency cells
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 1
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	256 chips
- Read SFN Indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 3
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present (Default is 0)
- CHOICE Mode	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	TRUE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not Present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1e
- Triggering condition 1	Not present
- Triggering condition 2	Monitored set cells
- Reporting range constant	Not Present
- Cells forbidden to affect reporting range	Not Present
- W	Not Present

- Hysteresis	1 dB
- Threshold used frequency	-70 dBm
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Time to trigger	0 ms
- Amount of reporting	Infinity
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	3
DPCH compressed mode status info	Not Present

## MEASUREMENT REPORT (Step 10)

Note 1: Cell measured results for cells 1 and 3 may appear in either order (i.e. cell 1 then cell 3 or cell 3 then cell 1)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	See Note 1
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent.
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is present
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	See Note 1
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is present and that the COUNT-C-SFN frame difference is included in it.
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if this IE is set to "Intra-frequency measurement event results"
- Intra-frequency event identity	Check to see if this IE is set to "1e"
- Cell measured event results	
- CHOICE mode	Check to see if this IE is set to "FDD"
- Primary CPICH info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3



MEASUREMENT CONTROL (Step 10a)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Modify
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info list	1 new intra-frequency cell
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity	Not Present
- Reporting cell status	Not Present
- Measurement validity	Not Present
- CHOICE report criteria	Not Present

MEASUREMENT REPORT (Step 10b)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	Check to see if measurement results for <u>2-3</u> cells are included (the order in which the different cells are reported is not important)
- <u>Cell measured results</u>	<u>(for cell 1)</u>
- <u>Cell Identity</u>	<u>Check to see if it is absent</u>
- <u>Cell synchronisation information</u>	<u>Check to see if it is absent.</u>
- <u>Primary CPICH Info</u>	<u>Check to see if it's the same code for cell 1</u>
- <u>Primary Scrambling Code</u>	<u>Check to see if this IE is present</u>
- <u>CPICH Ec/No</u>	<u>Check to see if this IE is present</u>
- <u>CPICH RSCP</u>	<u>Check to see if this IE is absent</u>
- <u>Pathloss</u>	
- Cell measured results	(for cell 2)
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is present and that the COUNT-C-SFN frame difference is included in it.
- Primary CPICH Info	Check to see if it's the same code for cell 2
- Primary Scrambling Code	Check to see if this IE is absent
- CPICH Ec/No	Check to see if this IE is present
- CPICH RSCP	Check to see if this IE is absent
- Pathloss	
- Cell measured results	(for cell 3)
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is present and that the COUNT-C-SFN frame difference is included in it.
- Primary CPICH Info	Check to see if it's the same code for cell 3
- Primary Scrambling Code	Check to see if this IE is absent
- CPICH Ec/No	Check to see if this IE is present
- CPICH RSCP	Check to see if this IE is absent
- Pathloss	
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if this IE is set to "Intra-frequency measurement event results"
- Intra-frequency event identity	Check to see if this IE is set to "1e"
- Cell measured event results	
- CHOICE mode	Check to see if this IE is set to "FDD"
- Primary CPICH info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2

MEASUREMENT CONTROL (Step 12)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Event Trigger
- Periodic Reporting / Event Trigger Reporting Mode	
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove all intra-frequency cells
- New intra-frequency cells	2 new intra-frequency cells
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 1
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present (Default is 0)
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not Present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1a
- Triggering condition 1	Not present
- Triggering condition 2	Monitored set cells
- Reporting range constant	8 dB
- Cells forbidden to affect reporting range	Not Present
- W	0
- Hysteresis	0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	1

- Replacement activation threshold	Not Present
- Time to trigger	5000 msec
- Amount of reporting	Infinity
- Reporting interval	16 s
- Reporting cell status	Not Present
DPCH compressed mode status info	Not Present

#### MEASUREMENT REPORT (Step 14)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured Results	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	
- CHOICE event result	
- Intra-frequency event identity	Check to see if this IE is set to "1a"
- Cell measured event results	
- CHOICE mode	Check to see if this IE is set to "FDD"
- Primary CPICH info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2

#### 8.4.1.1.5 Test Requirement

After step 5 the UE shall start to transmit 2 MEASUREMENT REPORT messages at 64 seconds interval. The measurement quantity "CPICH RSCP" of cell 2 shall be reported in these messages.

After step 7 the UE shall not transmit any MEASUREMENT REPORT messages within 64 seconds after SS has transmitted the MEASUREMENT CONTROL message in step 7.

After step 9 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, to report that the CPICH RSCP value for cell 3 has risen above the threshold stated in the MEASUREMENT CONTROL message transmitted by the SS in step 7. This MEASUREMENT REPORT message shall also contain IE "Event results", indicating the triggering of event '1e' by cell 3. It shall also contain the measured CPICH RSCP value and cell synchronisation information for cell 3, and the measured CPICH Ec/No and RSCP values for cell 1.

After step 10a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH to report that the CPICH RSCP value for cell 2 has risen above the threshold stated in the MEASUREMENT CONTROL message transmitted by the SS in step 10a. The MEASUREMENT REPORT message shall contain the measured CPICH RSCP value and cell synchronisation information for cell 2 and cell 3, as well as the measured CPICH Ec/No and RSCP for cell 1. The IE "Event results" in this message shall indicate that cell 2 has triggered the event.

After step 13, the UE shall transmit a MEASUREMENT REPORT message containing IE "Event results", indicating the triggering of event '1a' by cell 2. The MEASUREMENT REPORT message shall not contain any measured results.

## CHANGE REQUEST

⌘ **34.123-1 CR 599** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ CR 34.123-1 Rel-5: 12.4.2.4 Combined routing area updating / rejected / PLMN not allowed		
<b>Source:</b>	⌘ Nokia		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 22/10/2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ PLMN not allowed cause doesn't add whole equivalent PLMN list into forbidden PLMN list. In test case cells B and E are available. RAI-10 is rejected by cause PLMN not allowed in step 10. Cell E, RAI-11 is acceptable. UE shall cell select Cell E after combined routing area update reject.  Combined Attach Request or Routing Area Update shall not carry TMSI Status field if TMSI is available 3GPP TS 24.008 chapter's 9.4.1.3 and 9.4.14.4.  Mobile identity for P-TMSI shall be added in Routing Area Update Request in UMTS system. 3GPP 24.008 chapter 9.4.14.5  Note, Content of step 28a is removed, the same information is in 34.108  Revised after comments from Sony Ericsson Mobile Communications Japan, Inc.
<b>Summary of change:</b>	⌘ Whole equivalent PLMN list is not added in USIM:s forbidden PLMN list.
<b>Consequences if not approved:</b>	⌘ Test case is against 24.008

<b>Clauses affected:</b>	⌘ 12.4.2.4										
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N		X		X		X		
Y	N										
	X										
	X										
	X										

**Other comments:** ☹

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☹ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## System Information Block type 1 (cell B)

<ul style="list-style-type: none"> <li>- CN domain system information</li> <li>- CN domain identity</li> <li>- CHOICE CN Type</li> <li>- CN domain specific NAS system information</li> <li>- GSM-MAP NAS system information</li> <li>- CN domain specific DRX cycle length coefficient</li> </ul>	PS GSM-MAP  05 00H 7
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## 12.4.2.3a.5 Test Requirement

At step4, when the UE is powered up or switched on, the UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step12, the UE shall:

- initiate the combined routing area updating procedure with the new value of DRX parameter.

At step 17, the SS sends the paging message for PS domain, the UE shall

- respond to the paging message for PS domain.

<START OF MODIFIED SECTION>

## 12.4.2.4 Combined routing area updating / rejected / PLMN not allowed

## 12.4.2.4.1 Definition

## 12.4.2.4.2 Conformance requirement

- 1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'PLMN not allowed' the User Equipment shall:

- 1.1 not perform combined GPRS~~A~~ attach when switched on in the same location area or PLMN, except when the PLMN identity is equal to the HPLMN.
- 1.2 delete the stored RAI, PS-CKSN, P-TMSI, P-TMSI signature, TMSI CKSN and LAI.
- 1.3 store the PLMN in the 'forbidden PLMN list', except when the PLMN identity is equal to the HPLMN.

- 1) An MS that receives a ROUTING AREA UPDATE REJECT message stops timer T3330, enters state MM IDLE and for all causes except #12, #14 and #15 deletes the list of "equivalent PLMNs".

## Reference

3GPP TS 24.008 clause 4.7.5.2.

3GPP TS 23.122 clause 3.1.

## 12.4.2.4.3 Test purpose

To test the behaviour of the UE if the network rejects the combined routing area updating procedure of the UE with the cause 'PLMN not allowed'.

## 12.4.2.4.4 Method of test

## Initial condition

System Simulator:

Five cells (not simultaneously activated), cell A in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell B in MCC1/MNC2/LAC1/RAC2 (RAI-10), cell C in MCC1/MNC2/LAC2/RAC1 (RAI-9) and cell D in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell E in MCC1/MNC3/LAC1/RAC1 (RAI-11).

The PLMN containing Cell E is equivalent to the PLMN that contains Cell A.  
All five cells are operating in network operation mode I

The HPLMN is different from MCC1/MNC2.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No
PS attach attempted automatically by outstanding request	Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'PLMN not allowed'. The SS checks that the UE does not perform PS attach if activated in the same PLMN. The SS checks that the UE does not perform IMSI attach if activated in the same PLMN.



## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Non-Suitable cell". Set the cell type of cell E to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-82 P-TMSI-82 signature Routing area identity = RAI-8 Mobile identity = TMSI-1 Equivalent PLMN: MCC = 1, MNC=3
5		->	ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
7		SS		The following messages are sent and shall be received on cell B and cell E. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". Set the cell type of cell E to the "Suitable neighbour cell". (see note)
8	UE			Cell B is preferred by the UE.
8a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
9		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' <del>Old P-TMSI Signature=</del> P-TMSI-82 signature Routing area identity = RAI-8 <u>Valid TMSI is available. Routing Area Update PDU shall n't carry TMSI status. =valid TMSI available</u> <u>Mobile identity = P-TMSI-8</u>
10		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'PLMN not allowed'
10a		SS		The SS releases the RRC connection.
10b				<u>Cell E is preferred by the UE</u>
11	UE			<u>UE starts registration, see 34.108</u> <del>The UE initiates an attach by MMI or AT command.</del>
12		SS		<u>The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</u> <del>No ATTACH REQUEST sent to SS (SS waits 30 seconds).</del>

Step	Direction		Message	Comments
	UE	SS		
12a	->	SS	<u>ATTACH REQUEST</u>	<u>Attach type = 'Combined PS / IMSI attach'</u> <u>Mobile identity =IMSI</u> <u>TMSI status = no valid TMSI available</u> <del>The SS deactivates cell E.</del> <del>Set the cell type of cell E to the "Non-Suitable cell".</del>
13	<-		<u>AUTHENTICATION AND CIPHERING REQUEST</u> <del>PAGING TYPE1</del>	<del>Mobile identity = P-TMSI-2</del> <del>Paging order is for PS services.</del>
14	->	UE	<u>AUTHENTICATION AND CIPHERING RESPONSE</u>	<del>No response from the UE to the request. This is checked for 10 seconds.</del>
<u>14a</u>		SS		<del>The SS starts integrity protection. The following messages are sent and shall be received on cell C.</del>
15	<-	SS	<u>ATTACH ACCEPT</u>	<u>Attach result = 'Combined PS / IMSI attached'</u> <u>Mobile identity = P-TMSI-11</u> <u>P-TMSI-11 signature</u> <u>Routing area identity = RAI-11</u> <u>Mobile identity = TMSI-2</u> <u>Equivalent PLMN: MCC = 1, MNC=2</u> <del>Set the cell type of cell B to the "Non-Suitable cell".</del> <del>Set the cell type of cell C to the "Serving cell".</del> <del>(see note)</del>
16	->	UE	<u>ATTACH COMPLETE</u>	<del>Cell C is preferred by the UE.</del>
17		SS		<del>The UE initiates an attach by MMI or by AT command. The SS releases the RRC connection.</del>
18	<-	UE	<u>PAGING TYPE1</u>	<u>Paging is sent on cell A.</u> <u>Mobile identity= P-TMSI-11</u> <u>P-TMSI-11 signature</u> <u>Paging order for PS services</u> <del>No ATTACH REQUEST sent to SS</del> <del>(SS waits 30 seconds).</del>
<u>18a</u>				<u>The UE shall not initiate an RRC connection.</u> <u>This is checked during 3 seconds.</u>
19	<-		PAGING TYPE1	<u>Paging is sent on cell B.</u> <del>Mobile identity = TMSI-2</del> Paging order is for CS services.
20		UE		The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21		SS	<u>Void</u>	<del>The following messages are sent and shall be received on cell A.</del> <del>Set the cell type of cell A to the "Serving cell".</del> <del>Set the cell type of cell C to the "Non-Suitable cell".</del> <del>(see note)</del>
22		UE	<u>Void</u>	<del>Cell A is preferred by the UE.</del>
23		UE	<u>Void</u>	<del>The UE initiates an attach by MMI or by AT command.</del>
24		UE	<u>Void</u>	<del>No ATTACH REQUEST sent to SS</del> <del>(SS waits 30 seconds).</del>
25	<-		<u>Void</u> <del>PAGING TYPE1</del>	<del>Mobile identity = P-TMSI-2</del> <del>Paging order is for PS services.</del>
26		UE	<u>Void</u>	<del>No response from the UE to the request. This is checked for 10 seconds.</del>
27		SS		The following messages are sent and shall be received on cell D. Set the cell type of cell <u>B, A and E</u> to the "Non-Suitable cell". Set the cell type of cell D to the "Serving cell". <del>(see note)</del>
28		UE		Cell D is preferred by the UE. Step <u>28a and 29 are</u> only performed by an UE which will not initiate a PS attach automatically (see ICS)

Step	Direction		Message	Comments
	UE	SS		
28a conditional	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE.
29 conditional	UE			The UE initiates an attach by MMI or by AT command.
29a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
30		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI Valid TMSI is available. Attach Request PDU shall not carry TMSI status = no valid TMSI available.
30a		SS		The SS starts integrity protection.
31		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-24 P-TMSI-24 signature Routing area identity = RAI-2 Mobile identity = IMSI
32		->	ATTACH COMPLETE	
33	UE			The UE is switched off or power is removed (see ICS).
34		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
35		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Serving cell" and "Suitable neighbour cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.4.2.4.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- -initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step 10, the UE shall delete the equivalent PLMN list (MCC=1, MNC=3).

At step 12, the UE shall ~~not~~ initiate a PS attach procedure to cell E.

~~At step 18 and 24, UE shall:~~

- ~~— not initiate a PS attach procedure.~~

At step18, 20 and 26, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step19, 20, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step30, UE shall:

- perform the PS attach procedure.

<END OF MODIFIED SECTION>

CR-Form-v7

## CHANGE REQUEST

⌘ **TS34.123-1 CR 584** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Update of test cases in TS34.123-1 clause 7.1 to be applicable to 1.28 Mcps TDD		
<b>Source:</b>	⌘ CATT/CCSA		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 10/23/2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	<i>Use <u>one</u> of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use <u>one</u> of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ According to TS25.321, coding of the Target Channel Type Field on FACH for TDD is different from that of FDD. In the current version of 34.123-1, there are only FDD coding values of TCTF. So the coding of TCTF for TDD should be added in the related clauses.
<b>Summary of change:</b>	⌘ In clause 7.1.1.1: <ul style="list-style-type: none"> <li>• The correct TCTF value of CCCH over FACH for TDD is specified.</li> </ul> In clause 7.1.1.2: <ul style="list-style-type: none"> <li>• The correct TCTF value of DCCH or DTCH over RACH for TDD is specified.</li> </ul> In clauses 7.1.1.3, 7.1.1.4 and 7.1.1.5: <ul style="list-style-type: none"> <li>• Within "Test procedure", the TCTF value of DCCH or DTCH over FACH for TDD is added .</li> </ul> In clause 7.1.1.8: <ul style="list-style-type: none"> <li>• Within "Method of test", the sections referenced from TS34.108 for TDD are specified.</li> </ul>
<b>Consequences if not approved:</b>	⌘ Otherwise UE cannot be tested properly in TDD mode.

<b>Clauses affected:</b>	⌘ 7.1.1.1, 7.1.1.2, 7.1.1.3, 7.1.1.4, 7.1.1.5, 7.1.1.8													
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;"> </td> </tr> </table> Other core specifications ⌘	Y	N		X	X		<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;"> </td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;"> </td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;"> </td> </tr> </table> Test specifications ⌘						
Y	N													
	X													
X														

**Other comments:** ☞

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☞ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.1.1.1 CCCH mapped to RACH/FACH / Invalid TCTF

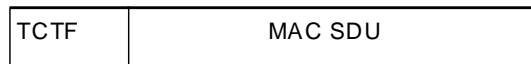
7.1.1.1.1 Definition

This tests that the MAC applies the correct header to the MAC PDU according to the type of logical channel carried on the RACH/FACH transport channel. Incorrect application of MAC headers would result in inoperation of the UE.

7.1.1.1.2 Conformance requirement

CCCH mapped to RACH/FACH:

- TCTF field is included in MAC header.



The following fields are defined for the MAC header:

- Target Channel Type Field
- ...

**Coding of the Target Channel Type Field on FACH for FDD**

TCTF	Designation
00	BCCH
01000000	CCCH
01000001-01111111	Reserved (PDUs with this coding will be discarded by this version of the protocol)
10000000	CTCH
10000001-10111111	Reserved (PDUs with this coding will be discarded by this version of the protocol)
11	DCCH or DTCH over FACH

**Coding of the Target Channel Type Field on FACH for TDD**

<u>TCTF</u>	<u>Designation</u>
<u>000</u>	<u>BCCH</u>
<u>001</u>	<u>CCCH</u>
<u>010</u>	<u>CTCH</u>
<u>01100</u>	<u>DCCH or DTCH over FACH</u>
<u>01101-01111</u>	Reserved (PDUs with this coding will be discarded by this version of the protocol)
<u>100</u>	SHCCH
<u>101-111</u>	Reserved (PDUs with this coding will be discarded by this version of the protocol)

Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.4.

7.1.1.1.3 Test purpose

1. To verify that the UE discards PDUs with reserved or incorrect values in the TCTF field.
2. To verify that the TCTF field is correctly applied when a CCCH is mapped to the RACH/FACH.

7.1.1.1.4 Method of test

Initial conditions

System Simulator:

1 cell, default parameters, Ciphering Off.

The SCCPCH is configured as specified in TS 34.108 clause 6.10.2.4.3.3([FDD](#)) , [6.11.5.4.4.3\(1.28Mcps TDD\)](#) (Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH) with the following exceptions for the FACH:

[FDD:](#)

Higher layer	RAB/signalling RB		SRB#0	
	User of Radio Bearer		Test	
RLC	Logical channel type		CCCH	
	RLC mode		TM	
	Payload sizes, bit		168	
	Max data rate, bps		33600 (alt. 50400)	
	RLC header, bit		0	
MAC	MAC header, bit		0 (note)	
	MAC multiplexing		Simulated by SS	
Layer 1	TrCH type		FACH	
	TB sizes, bit		168	
	TFS	TF0, bits	0 x 168	
		TF1, bits	1 x 168	
		TF2, bits	2 x 168	
		TF3, bits	N/A (alt. 3 x 168)	
	TTI, ms		10	
	Coding type		CC 1/2	
	CRC, bit		16	
	Max number of bits/TTI before rate matching		752 (alt. 1136)	
	RM attribute		200-240	
NOTE: The SS MAC layer must be configured not to add a MAC header so that the header can be added by the test case in order to create the necessary invalid values.				

[TDD:](#)

Higher layer	RAB/signalling RB		SRB#0
	User of Radio Bearer		Test
RLC	Logical channel type		CCCH
	RLC mode		TM
	Payload sizes, bit		171
	Max data rate, bps		33600 (alt. 50400)



	<a href="#">RLC header, bit</a>	<a href="#">0</a>	
<a href="#">MAC</a>	<a href="#">MAC header, bit</a>	<a href="#">0 (note)</a>	
	<a href="#">MAC multiplexing</a>	<a href="#">Simulated by SS</a>	
<a href="#">Layer 1</a>	<a href="#">TrCH type</a>	<a href="#">FACH</a>	
	<a href="#">TB sizes, bit</a>	<a href="#">171</a>	
	<a href="#">TFS</a>	<a href="#">TF0, bits</a>	<a href="#">0 x 171</a>
		<a href="#">TF1, bits</a>	<a href="#">1 x 171</a>
		<a href="#">TF2, bits</a>	<a href="#">2 x 171</a>
		<a href="#">TF3, bits</a>	<a href="#">3 x 171</a>
		<a href="#">TF4, bits</a>	<a href="#">4x 171</a>
		<a href="#">TF5, bits</a>	<a href="#">N/A (alt. 5x 171)</a>
		<a href="#">TF6, bits</a>	<a href="#">N/A (alt. 6 x 171)</a>
	<a href="#">TTI, ms</a>	<a href="#">20</a>	
	<a href="#">Coding type</a>	<a href="#">CC 1/2</a>	
	<a href="#">CRC, bit</a>	<a href="#">16</a>	
	<a href="#">Max number of bits/TTI before rate matching</a>	<a href="#">1528 (alt. 2292)</a>	
<a href="#">RM attribute</a>	<a href="#">200-240</a>		
<a href="#">NOTE:</a> <a href="#">The SS MAC layer must be configured not to add a MAC header so that the header can be added by the test case in order to create the necessary invalid values.</a>			

And using the configuration in TS 34.108 clause 6.10.2.4.3.3([FDD](#)), [6.11.5.4.4.3\(1.28Mcps TDD\)](#) for the PCH.  
 The TFCS should be configured as specified in clause 6.10.2.4.3.3.1.4([FDD](#)), [6.11.5.4.4.3.1.4\(1.28Mcps TDD\)](#).

User Equipment:

The UE shall operate under normal test conditions, Ciphering Off.  
 The Test-USIM shall be inserted.

The SS starts broadcasting the System Information as specified in TS 34.108 clause 6.1, using the configuration for the PRACH and SCCPCH (signalled in SYSTEM INFORMATION 5) as follows:

1. The SCCPCH is configured as specified in TS 34.108 clause 6.10.2.4.3.3 ([FDD](#)), [6.11.5.4.4.3\(1.28Mcps TDD\)](#) (Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH).
2. The PRACH is configured as specified in TS 34.108 clause 6.10.2.4.4.1([FDD](#)), [6.11.5.4.5.2\(TDD\)](#).

The SS follows the procedure in TS 34.108 clause 7.2.2.1 (CS UE) or 7.2.2.2 (PS UE) so that the UE shall be in idle mode and registered.

Test procedure

- a) The SS pages the UE.
- b) The SS waits for the first RRC CONNECTION REQUEST message to arrive on the PRACH/CCCH.
- c) The SS responds with an RRC CONNECTION SETUP message (specified in TS 34.108 cclause 9: Contents of RRC CONNECTION SETUP message: UM (Transition to CELL\_DCH) ([FDD](#)), or UM (Transition to CELL\_DCH) (1.28 Mcps TDD option). In this case the SS will transmit the message in 152 bit (note) segments, with a valid UM RLC header and with the MAC header set as follows:

[FDD:](#)

Field	Value
TCTF	00'B

[TDD:](#)

<u>Field</u>	<u>Value</u>
<u>TCTF</u>	<u>000'B</u>

NOTE: In the case of a 2-bit MAC header the segment shall be padded to the correct length.

- d) The SS waits for retransmission of the RRC CONNECTION REQUEST on the PRACH/CCCH due to expiry of timer T300.
- e) The SS repeats steps c) and d), with the TCTF field set as follows:

FDD:

<b>Iteration</b>	<b>TCTF Value</b>
2	01000001'B
3	10000000'B
4	10000001'B
5	11'B

TDD:

<u>Iteration</u>	<u>TCTF Value</u>
<u>2</u>	<u>010'B</u>
<u>3</u>	<u>01100'B</u>
<u>4</u>	<u>01101'B</u>
<u>5</u>	<u>100</u>
<u>6</u>	<u>101'B</u>

- f) The SS repeats steps c) and d), with the TCTF field set as to 01000000'B(FDD), 001'B(TDD).

Expected sequence

FDD:

Step	Direction		Message	Comments
	UE	SS		
1	←		PAGING TYPE 1	
2	→		RRC CONNECTION REQUEST	
3	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 00'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 00'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 00'B
4	→		RRC CONNECTION REQUEST	
5	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 0100 0001'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 0100 0001'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 0100 0001'B
6	→		RRC CONNECTION REQUEST	
7	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 1000 0000'B
	←		MAC PDU(TCTF, UE-ID, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 1000 0000'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 1000 0000'B
8	→		RRC CONNECTION REQUEST	
9	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 1000 0001'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 1000 0001'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 1000 0001'B
10	→		RRC CONNECTION REQUEST	
11	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 11'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 11'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 11'B
12	→		RRC CONNECTION REQUEST	
13	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with correct TCTF = 0100 0000'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with correct TCTF = 0100 0000'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with correct TCTF = 0100 0000'B
14	→		RRC CONNECTION SETUP COMPLETE	TCTF Field is recognised as correct for the CCCH

[TDD:](#)

Step	Direction		Message	Comments
	UE	SS		
1	←		PAGING TYPE 1	
2	→		RRC CONNECTION REQUEST	
3	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 000'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 000'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 000'B
4	→		RRC CONNECTION REQUEST	
5	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 010'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 010'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 010'B
6	→		RRC CONNECTION REQUEST	
7	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 01100'B
	←		MAC PDU(TCTF, UE-ID, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 01100'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 01100'B
8	→		RRC CONNECTION REQUEST	
9	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 01101'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 01101'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 01101'B
10	→		RRC CONNECTION REQUEST	
11	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 100'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 100'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 100'B
12	→		RRC CONNECTION REQUEST	
13	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 101'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 101'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 101'B
14	→		RRC CONNECTION REQUEST	
15	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with correct TCTF = 001'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with correct TCTF = 001'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with correct TCTF = 001'B
16	→		RRC CONNECTION SETUP COMPLETE	TCTF Field is recognised as correct for the CCCH

Specific Message Contents

None.

7.1.1.1.5 Test Requirement

On the first iteration, and on each iteration in step e) the UE should not recognise the RRC CONNECTION SETUP message and therefore should retransmit the RRC CONNECTION REQUEST after each expiry of T300 (the UE should send up to N300=7 RRC CONNECTION REQUESTs before abandoning the procedure).

On the final iteration the UE should respond with an RRC CONNECTION SETUP COMPLETE message.

## 7.1.1.2 DTCH or DCCH mapped to RACH/FACH / Invalid TCTF

### 7.1.1.2.1 Definition

This tests that the MAC applies the correct header to the MAC PDU according to the type of logical channel carried on the RACH/FACH transport channel. Incorrect application of MAC headers would result in inoperation of the UE.

### 7.1.1.2.2 Conformance requirement

DTCH or DCCH mapped to RACH/FACH:

TCTF field, C/T field, UE-Id type field and UE-Id are included in the MAC header.

The following fields are defined for the MAC header:

- Target Channel Type Field
- ...

#### Coding of the Target Channel Type Field on FACH for FDD

TCTF	Designation
00	BCCH
01000000	CCCH
01000001- 01111111	Reserved (PDUs with this coding will be discarded by this version of the protocol)
10000000	CTCH
10000001- 10111111	Reserved (PDUs with this coding will be discarded by this version of the protocol)
11	DCCH or DTCH over FACH

#### Coding of the Target Channel Type Field on FACH for TDD

<u>TCTF</u>	<u>Designation</u>
<u>000</u>	<u>BCCH</u>
<u>001</u>	<u>CCCH</u>
<u>010</u>	<u>CTCH</u>
<u>01100</u>	<u>DCCH or DTCH over FACH</u>
<u>01101- 01111</u>	<u>Reserved</u> (PDUs with this coding will be discarded by this version of the protocol)
<u>100</u>	<u>SHCCH</u>
<u>101-111</u>	<u>Reserved</u> (PDUs with this coding will be discarded by this version of the protocol)

#### Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.1 c).

### 7.1.1.2.3 Test purpose

1. To verify that the UE discards PDUs with reserved or incorrect values in the TCTF field.

- To verify that the TCTF field, C/T field, UE-Id type and UE-Id field are correctly applied when a DTCH or DCCH is mapped to the RACH/FACH.

7.1.1.2.4 Method of test

Initial conditions

System Simulator:

1 cell, default parameters, Ciphering Off.

The SCCPCH is configured as specified in TS 34.108 clause 6.10.2.4.3.3([FDD](#)) , 6.11.5.4.4.3([1.28Mcps TDD](#)) (Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH) with the following exceptions for the FACH:

[FDD:](#)

Higher layer	RAB/signalling RB	RB#3 (SRB#3)	
	User of Radio Bearer	Test	
RLC	Logical channel type	DCCH	
	RLC mode	TM	
	Payload sizes, bit	168	
	Max data rate, bps	33600 (alt. 50400)	
	RLC header, bit	0	
MAC	MAC header, bit	0 (note)	
	MAC multiplexing	Simulated by SS	
Layer 1	TrCH type	FACH	
	TB sizes, bit	168	
	TFS	TF0, bits	0 x 168
		TF1, bits	1 x 168
		TF2, bits	2 x 168
		TF3, bits	N/A (alt. 3 x 168)
	TTI, ms	10	
	Coding type	CC ½	
	CRC, bit	16	
	Max number of bits/TTI before rate matching	752 (alt. 1136)	
	RM attribute	200-240	
	NOTE:	The SS MAC layer must be configured not to add a MAC header so that the header can be added by the test case in order to create the necessary invalid values.	

[TDD:](#)

<a href="#">Higher layer</a>	<a href="#">RAB/signalling RB</a>	<a href="#">RB#3 (SRB#3)</a>
	<a href="#">User of Radio Bearer</a>	<a href="#">Test</a>
<a href="#">RLC</a>	<a href="#">Logical channel type</a>	<a href="#">DCCH</a>
	<a href="#">RLC mode</a>	<a href="#">TM</a>
	<a href="#">Payload sizes, bit</a>	<a href="#">171</a>
	<a href="#">Max data rate, bps</a>	<a href="#">33600 (alt. 50400)</a>

	<a href="#">RLC header, bit</a>	<a href="#">0</a>	
<a href="#">MAC</a>	<a href="#">MAC header, bit</a>	<a href="#">0 (note)</a>	
	<a href="#">MAC multiplexing</a>	<a href="#">Simulated by SS</a>	
<a href="#">Layer 1</a>	<a href="#">TrCH type</a>	<a href="#">FACH</a>	
	<a href="#">TB sizes, bit</a>	<a href="#">171</a>	
	<a href="#">TFS</a>	<a href="#">TF0, bits</a>	<a href="#">0 x 171</a>
		<a href="#">TF1, bits</a>	<a href="#">1 x 171</a>
		<a href="#">TF2, bits</a>	<a href="#">2 x 171</a>
		<a href="#">TF3, bits</a>	<a href="#">3 x 171</a>
		<a href="#">TF4, bits</a>	<a href="#">4x 171</a>
		<a href="#">TF5, bits</a>	<a href="#">N/A (alt. 5x 171)</a>
		<a href="#">TF6, bits</a>	<a href="#">N/A (alt. 6 x 171)</a>
	<a href="#">TTI, ms</a>	<a href="#">20</a>	
	<a href="#">Coding type</a>	<a href="#">CC 1/2</a>	
	<a href="#">CRC, bit</a>	<a href="#">16</a>	
	<a href="#">Max number of bits/TTI before rate matching</a>	<a href="#">1528 (alt. 2292)</a>	
<a href="#">RM attribute</a>	<a href="#">200-240</a>		
<a href="#">NOTE:</a> <a href="#">The SS MAC layer must be configured not to add a MAC header so that the header can be added by the test case in order to create the necessary invalid values.</a>			

and using the configuration in TS 34.108 clause 6.10.2.4.3.3([FDD](#)), [6.11.5.4.4.3\(1.28Mcps TDD\)](#) for the PCH.

The TFCS should be configured as specified in clause 6.10.2.4.3.3.1.4([FDD](#)), [6.11.5.4.4.3.1.4\(1.28Mcps TDD\)](#).

#### User Equipment:

The UE shall operate under normal test conditions, Ciphering Off.

The Test-USIM shall be inserted.

The SS starts broadcasting the System Information as specified in TS 34.108 clause 6.1, using the configuration for the PRACH and SCCPCH (signalled in SYSTEM INFORMATION 5) as follows:

1. The SCCPCH is configured as specified in TS 34.108 clause 6.10.2.4.3.3 ([FDD](#)), [6.11.5.4.4.3\(1.28Mcps TDD\)](#) (Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH).
2. The PRACH is configured as specified in TS 34.108 clause 6.10.2.4.4.1([FDD](#)), [6.11.5.4.5.2\(1.28Mcps TDD\)](#).

The SS follows the procedure in TS 34.108 clause 7.4.2.1 (Mobile Terminated) so that the UE shall be in state BGP 6-2 (CS-CELL\_FACH\_INITIAL).

#### Test procedure

- a) The SS receives the PAGING RESPONSE message from the UE and checks the TCTF field.
- b) The SS transmits MAC PDUs containing RLC AM PDUs containing a DIRECT TRANSFER message containing an AUTHENTICATION REQUEST message.
  1. Dummy octet string for NAS Message, of size sufficient enough to fit in one RLC PDU of 144 bits, including the correct RLC AM header.
  2. The IE CN Domain Identity is Set to PS Domain (no signalling connection for this domain exists).
  3. The polling bit in RLC header is set for transmission of RLC STATUS PDU.

The MAC header shall be set as follows:



Field	Value
TCTF	01000001'B( <a href="#">FDD</a> ), 010(TDD)
UE ID Type	C-RNTI
UE ID	As set in RRC CONNECTION SETUP message.
C/T	Logical Channel ID for SRB #3 (AM-DCCH NAS High Priority)

Where a TCTF size of 8-bits is used, 6-bits from the RLC payload shall be discarded.

- c) The SS checks that UE shall neither transmit RRC Status message on SRB2 nor RLC Status PDU on SRB3.
- d) The SS again transmits MAC PDUs as in b) above, but this time uses the correct TCTF of 11'B [for FDD](#), [01100'B for TDD](#). The sequence numbers in the RLC headers shall be identical with those sent in b).
- e) SS Receives RLC Status PDU on SRB #3 acknowledging the receipt of the above RLC PDU.
- f) The SS receives a RRC STATUS message on the uplink DCCH using AM RLC on SRB # 2.
- g) The SS repeats steps b), c), d) e) and f), with the TCTF field set as follows in step b):

[FDD:](#)

Iteration	TCTF Value
2	01111111'B
3	10000000'B
4	10000001'B
5	10111111'B

[TDD:](#)

Iteration	TCTF Value
<a href="#">2</a>	<a href="#">01101'B</a>
<a href="#">3</a>	<a href="#">01111'B</a>
<a href="#">4</a>	<a href="#">100'B</a>
<a href="#">5</a>	<a href="#">101'B</a>
<a href="#">6</a>	<a href="#">111'B</a>

Expected sequence

[FDD:](#)

Step	Direction		Message	Comments
	UE	SS		
1	→		PAGING RESPONSE	Check TCTF
2	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))	Sent with incorrect TCTF = 01000001'B, 01111111'B, 10000000'B, 10000001'B, or 10111111'B
2a			wait for T = 10 s	SS checks that UE shall neither transmit RRC-Status message on SRB 2 nor RLC Status PDU on SRB 3 See note 1 below
3	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))	Sent with correct TCTF = 11'B
4	→		RLC-STATUS-PDU	ACK PDUs with SN = x and TCTF Field is recognised as correct for the DCCH. See note 2 below
5	→		RRC Status message	
NOTE 1: UE will Transmit Signalling Connection Release Indication on expiry of MM Timer T3240 or GMM Timer T3317.				
NOTE 2: RRC Status message may be received before RLC Status PDU.				

TDD:

Step	Direction		Message	Comments
	UE	SS		
<u>1</u>	→		<u>PAGING RESPONSE</u>	<u>Check TCTF</u>
<u>2</u>	←		<u>MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))</u>	<u>Sent with incorrect TCTF = 010'B, 01101'B, 01111'B, 100'B, or 101'B, or 111'B</u>
<u>2a</u>			<u>wait for T = 10 s</u>	<u>SS checks that UE shall neither transmit RRC-Status message on SRB 2 nor RLC Status PDU on SRB 3</u> <u>See note 1 below</u>
<u>3</u>	←		<u>MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))</u>	<u>Sent with correct TCTF = 01100'B</u>
<u>4</u>	→		<u>RLC-STATUS-PDU</u>	<u>ACK PDUs with SN = x and TCTF Field is recognised as correct for the DCCH.</u> <u>See note 2 below</u>
<u>5</u>	→		<u>RRC Status message</u>	
<u>NOTE 1: UE will Transmit Signalling Connection Release Indication on expiry of MM Timer T3240 or GMM Timer T3317.</u>				
<u>NOTE 2: RRC Status message may be received before RLC Status PDU.</u>				

Steps 2 – 5 of above expected sequence are repeated for iterations 2 to 5. Note: For iteration k the SN in steps 2 and 4 starts with x + (k – 1).

Specific Message Contents

None

7.1.1.2.5 Test Requirement

In step a) the TCTF field should have the value 00'B. Note that this may be implied from receipt of the PAGING RESPONSE message correctly by the SS test script.

During the test the SS shall request an RLC status report with every transmitted PDU by setting of the Polling Bit. The UE shall not send any STATUS PDUs indicating missing PDUs.

At the end of each iteration (steps 4 and 5 of expected sequence) the SS shall receive an RRC Status message on SRB # 2, and RLC Status PDU on SRB # 3 with TCTF field set to value '01' B for FDD, '0100' B for TDD.

### 7.1.1.3 DTCH or DCCH mapped to RACH/FACH / Invalid C/T Field

#### 7.1.1.3.1 Definition

This tests that the MAC applies the correct header to the MAC PDU according to the type of logical channel carried on the RACH/FACH transport channel. Incorrect application of MAC headers would result in inoperation of the UE.

#### 7.1.1.3.2 Conformance requirement

DTCH or DCCH mapped to RACH/FACH:

TCTF field, C/T field, UE-Id type field and UE-Id are included in the MAC header.

The following fields are defined for the MAC header:

- C/T field  
The C/T field provides identification of the logical channel instance when multiple logical channels are carried on the same transport channel...

**Structure of the C/T field**

C/T field	Designation
0000	Logical channel 1
0001	Logical channel 2
...	...
1110	Logical channel 15
1111	Reserved (PDUs with this coding will be discarded by this version of the protocol)

#### Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.1 c).

#### 7.1.1.3.3 Test purpose

1. To verify that the UE discards PDUs with reserved or incorrect values in C/T field.
2. To verify that the TCTF field, C/T field, UE-Id type and UE-Id field are correctly applied when a DTCH or DCCH is mapped to the RACH/FACH.

#### 7.1.1.3.4 Method of test

##### Initial conditions

System Simulator:

See clause 7.1.1.2.4.

User Equipment:

See clause 7.1.1.2.4.

##### Test procedure

- a) The SS receives the PAGING RESPONSE message from the UE and checks the C/T field.
- b) The SS transmits MAC PDUs containing RLC AM PDUs containing a DIRECT TRANSFER message containing.

1. Dummy octet string for NAS Message, of size sufficient enough to fit in one RLC PDU of 144 bits, including the correct RLC AM header.
2. The IE CN Domain Identity is Set to PS Domain (no signalling connection for this domain exists).
3. The polling bit in RLC header is set for Transmission of RLC STATUS PDU.

The MAC header shall be set as follows:

Field	Value
TCTF	11'B(FDD), 01100'B(TDD)
UE ID Type	C-RNTI
UE ID	As set in RRC CONNECTION SETUP message.
C/T	0111'B

- c) The SS checks that UE shall neither transmit RRC Status message on SRB2 nor RLC Status PDU on.
- d) The SS again transmits MAC PDUs as in b) above, but this time uses the correct C/T value for AM-DCCH NAS High Priority of 0010'B. The sequence numbers in the RLC headers shall be identical with those sent in b).
- e) SS receives RLC Status PDU on SRB #3 acknowledging the receipt of the above RLC PDU.
- f) The SS receives a RRC STATUS message on the uplink DCCH using AM RLC on SRB # 2.
- g) The SS repeats steps b), c), d), e) and f), with the C/T field set as follows:

Iteration	C/T Value
2	1111'B

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		→	PAGING RESPONSE	Check C/T field
2		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))	Sent with incorrect C/T = 0111'B, or 1111'B.
2a			wait for T = 10 s	SS checks that UE shall neither transmit RRC-Status message on SRB 2 nor RLC Status PDU on SRB 3. See note 1 below.
3		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))	Sent with correct C/T = 0010'B
4		→	RLC-STATUS-PDU	ACK PDUs with SN = x C/T Field is recognised as correct for the DCCH. See note 2 below.
5		→	RRC Status message	
NOTE 1: UE will Transmit Signalling Connection Release Indication on expiry of MM Timer T3240 or GMM Timer T3317.				
NOTE 2: RRC Status message may be received before RLC Status PDU.				

Steps 2 to 5 of the expected sequence are repeated for iteration 2. Note: For iteration k the SN in steps 2 and 4 starts with  $x + (k - 1)$ .

Specific Message Contents

None

#### 7.1.1.3.5 Test Requirement

In step a) the C/T field should be set to the Logical Channel ID for SRB #3 (0010'B). Note that this may be implied from receipt of the PAGING RESPONSE message correctly by the SS test script.

During the test the SS shall request RLC status report with every transmitted PDU by setting of the Polling Bit. The UE shall not send any STATUS PDUs indicating missing PDUs.

At the end of each iteration (steps 4 and 5 of expected sequence) the SS shall receive a RLC Status PDU on SRB # 3, with C/T field set to value '0010'B and RRC Status message on SRB # 2.

#### 7.1.1.4 DTCH or DCCH mapped to RACH/FACH / Invalid UE ID Type Field

##### 7.1.1.4.1 Definition

This tests that the MAC applies the correct header to the MAC PDU according to the type of logical channel carried on the RACH/FACH transport channel. Incorrect application of MAC headers would result in inoperation of the UE.

##### 7.1.1.4.2 Conformance requirement

DTCH or DCCH mapped to RACH/FACH:

TCTF field, C/T field, UE-Id type field and UE-Id are included in the MAC header.

The following fields are defined for the MAC header:

- UE-Id Type  
The UE-Id Type field is needed to ensure correct decoding of the UE-Id field in MAC Headers.

**Table 9.2.1.7: UE-Id Type field definition**

UE-Id Type field 2 bits	UE-Id Type
00	U-RNTI
01	C-RNTI
10	Reserved (PDUs with this coding will be discarded by this version of the protocol)
11	Reserved (PDUs with this coding will be discarded by this version of the protocol)

##### Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.1 c).

##### 7.1.1.4.3 Test purpose

1. To verify that the UE discards PDUs with reserved values in UE-Id type field.
2. To verify that the TCTF field, C/T field, UE-Id type and UE-Id field are correctly applied when a DTCH or DCCH is mapped to the RACH/FACH.

##### 7.1.1.4.4 Method of test

##### Initial conditions

System Simulator:

See clause 7.1.1.2.4.

User Equipment:

See clause 7.1.1.2.4.

##### Test procedure

- a) The SS receives the PAGING RESPONSE message from the UE and checks the UE-Id Type field.
- b) The SS transmits MAC PDUs containing RLC AM PDUs containing a DIRECT TRANSFER message containing.

1. Dummy octet string for NAS Message, of size sufficient enough to fit in one RLC PDU of 144 bits, including the correct RLC AM header.
2. The IE CN Domain Identity is Set to PS Domain (no signalling connection for this domain exists)
3. The polling bit in RLC header is set for transmission of RLC STATUS PDU.

The MAC header shall be set as follows:

Field	Value
TCTF	11'B(FDD), 01100'B(TDD)
UE ID Type	10'B
UE ID	As set in RRC CONNECTION SETUP message.
C/T	Logical Channel ID for SRB #3 (AM-DCCH NAS High Priority): 0010'B

- c) The SS checks that UE shall neither transmit RRC Status message on SRB2 nor RLC Status PDU on SRB3.
- d) The SS again transmits MAC PDUs as in b) above, but this time uses the correct UE-Id type value for C-RNTI of 01'B. The sequence numbers in the RLC headers shall be identical with those sent in b).
- e) SS Receives RLC Status PDU on SRB #3 acknowledging the receipt of the above RLC PDU.
- f) The SS receives a RRC STATUS message on the uplink DCCH using AM RLC on SRB # 2
- g) The SS repeats steps b), c), d), e) and f), with the UE-Id type field set as follows in step b):

Iteration	UE-Id type Value
2	11'B

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	→		PAGING RESPONSE	Check UE-Id Type
2		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))	Sent with incorrect UE-Id Type = 10'B, or 11'B.
2a			wait for T = 10 s	SS checks that UE shall neither transmit RRC-Status message on SRB 2 nor RLC Status PDU on SRB 3. See note 1 below.
3		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))	Sent with correct UE-Id Type = 01'B
4	→		RLC-STATUS-PDU	ACK PDU with SN = x UE-Id is recognised as correct for the UE. See note 2 below.
5	→		RRC Status message	RRC
NOTE 1: UE will Transmit Signalling Connection Release Indication on expiry of MM Timer T3240 or GMM Timer T3317.				
NOTE 2: RRC Status message may be received before RLC Status PDU.				

Steps 2 to 5 of the expected sequence are repeated for iteration 2. Note: For iteration k the SN in step 2 and 4 starts with x + (k - 1).

Specific Message Contents

None

#### 7.1.1.4.5 Test Requirement

In step a) the UE-Id Type field should be set to 01'B. Note that this may be implied from receipt of the PAGING RESPONSE message correctly by the SS test script.

During the test the SS request an RLC status report with every transmitted PDU by setting of the Polling Bit. The UE shall not send any STATUS PDUs indicating missing PDUs.

At the end of each iteration (steps 4 and 5 of expected sequence) the SS shall receive a RLC Status PDU on SRB # 3, with UE Id type correctly set to '01'B and RRC Status message on SRB # 2.



### 7.1.1.5 DTCH or DCCH mapped to RACH/FACH / Incorrect UE ID

#### 7.1.1.5.1 Definition

This tests that the MAC applies the correct header to the MAC PDU according to the type of logical channel carried on the RACH/FACH transport channel. Incorrect application of MAC headers would result in inoperation of the UE.

#### 7.1.1.5.2 Conformance requirement

DTCH or DCCH mapped to RACH/FACH:

TCTF field, C/T field, UE-Id type field and UE-Id are included in the MAC header.

The following fields are defined for the MAC header:

- UE-Id  
The UE-Id field provides an identifier of the UE on common transport channels...

**Lengths of UE Id field**

UE Id type	Length of UE Id field
U-RNTI	32 bits
C-RNTI	16 bits

#### Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.1 c).

#### 7.1.1.5.3 Test purpose

1. To verify that the UE ignores PDUs with UE-Ids that do not match the Id allocated to it.
2. To verify that the TCTF field, C/T field, UE-Id type and UE-Id field are correctly applied when a DTCH or DCCH is mapped to the RACH/FACH.

#### 7.1.1.5.4 Method of test

##### Initial conditions

System Simulator:

See clause 7.1.1.2.4.

User Equipment:

See clause 7.1.1.2.4.

##### Test procedure

- a) The SS receives the PAGING RESPONSE message from the UE and checks the UE-Id field.
- b) The SS transmits MAC PDUs containing RLC AM PDUs containing a DIRECT TRANSFER message containing.
  1. Dummy Octet String for NAS Message, of size sufficient enough to fit in one RLC PDU of 144 bits, including the correct RLC AM header.
  2. The IE CN Domain Identity is Sset to PS Domain (no signalling connection for this domain exists)
  3. The polling bit in RLC header is set for transmission of RLC STATUS PDU.

The MAC header shall be set as follows:

Field	Value
TCTF	11'B(FDD), 01100'B(TDD)
UE ID Type	C-RNTI
UE ID	Address allocated in RRC CONNECTION SETUP message + 1.
C/T	Logical Channel ID for SRB #3 (AM-DCCH NAS High Priority): 0010'B

- c) The SS checks that UE shall neither transmit RRC Status message on SRB2 nor RLC Status PDU on SRB3.
- d) The SS again transmits MAC PDUs as in b) above, but this time uses the correct UE-Id value of the address allocated in the RRC CONNECTION SETUP message. The sequence numbers in the RLC headers shall be identical with those sent in b).
- e) SS Receives RLC Status PDU on SRB #3 acknowledging the receipt of the above RLC PDU
- f) The SS receives a RRC STATUS message on the uplink DCCH using AM RLC on SRB # 2.

#### Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	→		PAGING RESPONSE	Check UE-Id
2	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))	Sent with incorrect UE-Id = C-RNTI+1
2a			wait for T = 10 s	SS checks that UE shall neither transmit RRC-Status message on SRB 2 nor RLC Status PDU on SRB 3. See note 1 below.
3	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))	Sent with correct UE-Id = C-RNTI
4	→		RLC-STATUS-PDU	ACK PDUs with SN = x UE-Id is recognised as correct for the UE. See note 2 below.
5	→		RRC Status message	
NOTE 1: UE will Transmit Signalling Connection Release Indication on expiry of MM Timer T3240 or GMM Timer T3317.				
NOTE 2: RRC Status message may be received before RLC Status PDU.				

#### Specific Message Contents

None

#### 7.1.1.5.5 Test Requirement

In step a) the UE-Id field should be set to the C-RNTI allocated in the RRC CONNECTION SETUP message. Note that this may be implied from receipt of the PAGING RESPONSE message correctly by the SS test script.

During the test the SS shall request an RLC status report with every transmitted PDU by setting of the Polling Bit. The UE shall not send any STATUS PDUs indicating missing PDUs.

At the end of the expected sequence (steps 4 and 5) the SS shall receive receive RLC Status PDU on SRB # 3 with correct C-RNTI and RRC Status message on SRB # 2.

### 7.1.1.8 DTCH or DCCH mapped to DCH / Invalid C/T Field

#### 7.1.1.8.1 Definition

This tests that the MAC applies the correct header to the MAC PDU according to the type of logical channel carried on the DCH transport channel. Incorrect application of MAC headers would result in inoperation of the UE.

#### 7.1.1.8.2 Conformance requirement

DTCH or DCCH mapped to DCH, no multiplexing of dedicated channels on MAC: -no MAC header is required.

DTCH or DCCH mapped to DCH, with multiplexing of dedicated channels on MAC: -C/T field is included in MAC header.

The following fields are defined for the MAC header:

- C/T field

The C/T field provides identification of the logical channel instance when multiple logical channels are carried on the same transport channel...

**Structure of the C/T field**

C/T field	Designation
0000	Logical channel 1
0001	Logical channel 2
...	...
1110	Logical channel 15
1111	Reserved (PDUs with this coding will be discarded by this version of the protocol)

#### Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.1 b).

#### 7.1.1.8.3 Test purpose

1. To verify that the UE discards PDUs with reserved or incorrect values in C/T field.
2. To verify that the C/T field is correctly applied when a DTCH or DCCH is mapped to a DCH.

#### 7.1.1.8.4 Method of test

#### Initial conditions

#### System Simulator:

- 1 cell, default parameters, Cipherng Off.

The DCH/DPCH is configured as specified in TS 34.108 clause 6.10.2.4.1.2([FDD](#)), [6.11.5.4.1.2\(1.28Mcps TDD\)](#): (Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH) with the following exception:

Higher layer	RAB/signalling RB	RB#3 (SRB#3)	
	User of Radio Bearer	NAS_DT High prio	
RLC	Logical channel type	DCCH	
	RLC mode	TM	
	Payload sizes, bit	148	
	Max data rate, bps	3700	
	RLC header, bit	0	
MAC	MAC header, bit	0 (note)	
	MAC multiplexing	Simulated by SS	
Layer 1	TrCH type	DCH	
	TB sizes, bit	148	
	TFS	TF0, bits	0 x 148
		TF1, bits	1 x 148
	TTI, ms	40	
	Coding type	CC 1/3	
	CRC, bit	16	
	Max number of bits/TTI before rate matching	516	
	Uplink; Max number of bits/radio frame before rate matching	129	
	RM attribute	155-165	
NOTE: The SS MAC layer must be configured not to add a MAC header so that the header can be added by the test case in order to create the necessary invalid values.			

The TFCS should be configured as specified in clause 6.10.2.4.1.2.1.1.2([FDD](#)), [6.11.5.4.1.2.1.1.2\(1.28 Mcps TDD\)](#).

#### User Equipment:

The UE shall operate under normal test conditions, Cipherring Off.

The Test-USIM shall be inserted.

The SS starts broadcasting the System Information as specified in TS 34.108 clause 6.1, using the configuration for the PRACH and SCCPCH (signalled in SYSTEM INFORMATION 5) as follows:

1. The SCCPCH is configured as specified in TS 34.108 clause 6.10.2.4.3.3([FDD](#)), [6.11.5.4.4.3\(1.28Mcps TDD\)](#) (Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH).
2. The PRACH is configured as specified in TS 34.108 clause 6.10.2.4.4.1([FDD](#)), [6.11.5.4.5.2\(1.28Mcps TDD\)](#).

The SS follows the procedure in TS 34.108 clause 7.4.2.1 (Mobile Terminated) so that the UE shall be in state BGP 6-1 (CS-CELL\_DCH\_INITIAL). During this procedure the RRC CONNECTION SETUP message shall allocate a DCH to carry the signalling radio bearers as follows:

1. The DCH/DPCH is configured as specified in TS 34.108 clause 6.10.2.4.1.2([FDD](#)), [6.11.5.4.1.2\(1.28Mcps TDD\)](#): Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH).

#### Test procedure

- a) The SS receives the PAGING RESPONSE message from the UE and checks the C/T field.
- b) The SS transmits MAC PDUs containing RLC AM PDUs containing a DIRECT TRANSFER message containing
  1. Dummy octet string for NAS Message, of size sufficient enough to fit in one RLC PDU of 144 bits, including the correct RLC AM header.

2. The IE CN Domain Identity is Set to PS Domain (no signalling connection for this Domain exists).
3. The polling bit in RLC header is set for transmission of RLC STATUS PDU.

The MAC header shall be set as follows:

Field	Value
C/T	0111'B

- c) The SS checks that UE shall neither transmit RRC Status message on SRB2 nor RLC Status PDU on SRB3.
- d) The SS again transmits MAC PDUs as in b) above, but this time uses the correct C/T value for AM-DCCH NAS High Priority of 0010'B. The sequence numbers in the RLC headers shall be identical with those sent in b).
- e) SS Receives RLC Status PDU on SRB #3 acknowledging the receipt of the above RLC PDU.
- f) The SS receives a RRC STATUS message on the uplink DCCH using AM RLC on SRB # 2.
- g) The SS repeats steps b), c), d), e) and f), with the C/T field set as follows in step b):

Iteration	C/T Value
2	1111'B

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	→		PAGING RESPONSE	Check C/T field
2	←		MAC PDU(C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))	Sent with incorrect C/T = 0100'B, or 1111'B
2a			wait for T = 10 s	SS checks that UE shall neither transmit RRC-Status message on SRB 2 nor RLC Status PDU on SRB 3. See note 1 below.
3	←		MAC PDU(C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))	Sent with correct C/T = 0010'B
4	→		RLC-STATUS-PDU	ACK PDUs with SN = x C/T Field is recognised as correct for the DCCH. See note 2 below.
5	→		RRC Status message	
NOTE 1: UE will Transmit Signalling Connection Release Indication on expiry of MM Timer T3240 or GMM Timer T3317.				
NOTE 2: RRC Status message may be received before RLC Status PDU.				

Steps 2 to 5 of the expected sequence are repeated for iteration 2. Note: For iteration 2 the SN in steps 2 and 4 starts with x+1.

Specific Message Contents

None

7.1.1.8.5 Test Requirement

In step a) the C/T field should be set to the Logical Channel ID for SRB #3 (0010'B). Note that this may be implied from receipt of the PAGING RESPONSE message correctly by the SS test script.

During the test the SS shall request RLC status reports with every transmitted PDU by setting of the Polling Bit. The UE shall not send any STATUS PDUs indicating missing PDUs.

At the end of each iteration (steps 4 and 5 of expected sequence) the SS shall receive a RLC Status PDU on SRB # 3 with C/T field set to '0010'B and RRC Status message on SRB # 2.

## CHANGE REQUEST

⌘ **TS 34.123-1 CR 605** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Removal of Low priority RRC Measurement test cases		
<b>Source:</b>	⌘ Ericsson		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 06/11/2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ The low priority test cases 8.4.1.11-8.4.1.13 test the UE behaviour when an illegal overlap of CM patterns is defined in the NW. It is not a likely scenario that a real network would create CM patterns that overlaps, therefore Ericsson proposes to remove these test cases.  <b>Changes in this revision compared to T1-031393 Mrked in green:</b> The CM patterns are defined by the NW vendors and are normally not changed, therefore it is not likely that they would be overlapping. The normal procedure for changing CM patterns are via PHYSICAL CHANNEL RECONFIGURATION and this is tested in a lot of test cases. In all three test cases a Reconfiguration message is sent to the UE which will cause an illegal CM overlap. The UE should answer with a RECONFIGURATION COMPLETE message and shall then send an PHYSICAL CHANNEL RECONFIGURATION FAILURE message indicating the illegal CM overlap. There is no performance requirement on the UE when it shall discover the illegal overlap and send the PHYSICAL CHANNEL RECONFIGURATION FAILURE message, this makes the testcases unpredictable.
<b>Summary of change:</b>	⌘ Low priority test cases 8.4.1.11, 8.4.1.12 and 8.4.1.13 removed. Void added to all removed test cases.
<b>Consequences if</b>	⌘ Test cases that presumes faulty Network behaviour remains in test specification.

**not approved:**

<b>Clauses affected:</b>	⌘	8.4.1.11, 8.4.1.12, 8.4.1.13										
<b>Other specs affected:</b>		<table border="1"><tr><td>Y</td><td>N</td></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr><tr><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr></table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
	Y	N										
	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input checked="" type="checkbox"/>											
		Test specifications	TS 34.123-2									
		O&M Specifications										
<b>Other comments:</b>	⌘	Affects R99, REL-4 and REL-5 UEs.										

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.



### 8.4.1.11 Measurement Control and Report: Compressed Mode Configuration Failure during radio bearer reconfiguration procedure **Void**

#### 8.4.1.11.1 Definition

#### 8.4.1.11.2 Conformance requirement

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is included, the UE shall for each transmission gap pattern sequence perform the following consistency checks:

1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires UL compressed mode for measurements on any of the cells to be measured according to UE variable CELL\_INFO\_LIST, and CHOICE 'UL/DL mode' indicates 'DL only':

2> set the variable INVALID\_CONFIGURATION to TRUE.

1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires DL compressed mode for measurements on any of the cells to be measured according to UE variable CELL\_INFO\_LIST, and CHOICE 'UL/DL mode' indicates 'UL only':

2> set the variable INVALID\_CONFIGURATION to TRUE.

1> if UE already has an active transmission gap pattern sequence that, according to IE "TGMP", has the same measurement purpose, and both patterns will be active after the new configuration has been taken into use:

2> set the variable INVALID\_CONFIGURATION to TRUE.

If variable INVALID\_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

...

1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified below.

When the UE has received from the UTRAN the configurations of several compressed mode transmission gap pattern sequences, and if several of these patterns are to be simultaneously active, the UE shall check to see if these simultaneously active transmission gap pattern sequences create transmission gaps in the same frame. An illegal overlap is created if two or more transmission gap pattern sequences create transmission gaps in the same frame, irrespective of the gaps are created in uplink or downlink.

If the parallel transmission gap pattern sequences create an illegal overlap, the UE shall:

1> delete the overlapping transmission gap pattern sequence configuration stored in the variable TGPS\_IDENTITY, which is associated with the highest value of IE "TGPSI";

1> transmit a PHYSICAL\_CHANNEL\_RECONFIGURATION\_FAILURE message on the DCCH using AM RLC, setting the information elements as specified below;

2> not include the IE "RRC transaction identifier";

2> set the cause value in IE "failure cause" to value "compressed mode runtime error".

1> terminate the inter frequency and/or inter RAT measurements corresponding to the deleted transmission gap pattern sequence;

1> when the PHYSICAL\_CHANNEL\_RECONFIGURATION\_FAILURE message has been submitted to lower layers for transmission:

2> the procedure ends.

## Reference

~~3GPP TS 25.331 clause 8.2.2, clause 8.2.11.2, clause 8.6.6.15~~

## 8.4.1.11.3 Test purpose

- ~~1. To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the uplink DCCH using AM RLC, if it receives a RADIO BEARER RECONFIGURATION message which includes IE "DPCH compressed mode info" that causes an illegal overlap involving more than one parallel transmission gap pattern sequences.~~
- ~~2. To confirm that the UE terminate any inter frequency measurements corresponding to the deleted transmission gap pattern sequence.~~

## 8.4.1.11.4 Method of test

## Initial Condition

~~System Simulator: 2 cells—Cell 1 and cell 4 are active.~~

~~UE: CS-DCCH+DTCH\_DCH (State 6-9) or PS-DCCH+DTCH\_DCH (State 6-10) as specified in TS34.108 clause 7.4, depending on the CN domain supported.~~

## Specific Message Contents

## RADIO BEARER SETUP

~~The contents of RADIO BEARER SETUP message is identical to the message in P11 or P13 provided in TS 34.108 with the following exceptions:~~

Information Element	Value/remark
<del>DPCH compressed mode info</del>	
<del>TGPSI</del>	<del>+</del>
<del>TGPS Status Flag</del>	<del>Deactivate</del>
<del>TGCFN</del>	<del>(Current CFN + (256 - TTI/10msec)) mod 256</del>
<del>Transmission gap pattern sequence configuration parameters</del>	
<del>TGMP</del>	<del>FDD Measurement</del>
<del>TGPRC</del>	<del>Infinity</del>
<del>TGSN</del>	<del>4</del>
<del>TGL1</del>	<del>7</del>
<del>TGL2</del>	<del>5</del>
<del>TGD</del>	<del>0</del>
<del>TGPL1</del>	<del>3</del>
<del>TGPL2</del>	<del>5</del>
<del>RPP</del>	<del>Mode 0</del>
<del>ITP</del>	<del>Mode 0</del>
<del>CHOICE UL/DL Mode</del>	<del>UL and DL</del>
<del>Downlink compressed mode method</del>	<del>SF/2</del>

<del>Uplink compressed mode method</del>	<del>SE/2</del>
<del>Downlink frame type</del>	<del>B</del>
<del>DeltaSIR1</del>	<del>2.0</del>
<del>DeltaSIRafter1</del>	<del>1.0</del>
<del>DeltaSIR2</del>	<del>Not Present</del>
<del>DeltaSIRafter2</del>	<del>Not Present</del>
<del>N identify abort</del>	<del>Not Present</del>
<del>T Reconfirm abort</del>	<del>Not Present</del>

~~System Information Block type 11~~

~~Use same message sub-clause 6.1 of TS34.108, with following exception:~~

<del>Information Element</del>	<del>Value/remark</del>
<del>SIB12 indicator</del>	<del>FALSE</del>
<del>Intra frequency measurement system information</del>	
<del>Intra frequency cell info list</del>	<del>This IE doesn't include information of cell 4</del>
<del>Inter frequency measurement system information</del>	
<del>Inter frequency cell info list</del>	
<del>New inter frequency cell id</del>	
<del>Inter frequency cell id</del>	<del>4</del>
<del>Frequency info</del>	
<del>CHOICE mode</del>	<del>FDD</del>
<del>UARFCN uplink(Nu)</del>	<del>Not present</del>
	<del>Absence of this IE is equivalent to apply the default duplex distance defined for the operating frequency according to 25.101</del>
<del>UARFCN downlink(Nd)</del>	<del>Reference to table 6.1.2 of TS34.108 for Cell 4</del>
<del>Cell info</del>	
<del>Cell individual offset</del>	<del>Not Present</del>
<del>Reference time difference to cell</del>	<del>Not present</del>
<del>Read SFN indicator</del>	<del>FALSE</del>
<del>CHOICE mode</del>	<del>FDD</del>
<del>Primary CPICH info</del>	
<del>Primary scrambling code</del>	<del>Refer to clause titled "Default settings for cell No.4 (FDD)" in clause 6.1.4 of TS34.108</del>
<del>Primary CPICH Tx power</del>	<del>Not present</del>

<del>Cell Selection and Re-selection Info</del>	
<del>Qoffset1<sub>s,n</sub></del>	<del>0dB</del>
<del>Qoffset2<sub>s,n</sub></del>	<del>Not Present</del>
<del>Maximum allowed UL TX power</del>	<del>Reference to table 6.1.1</del>
<del>HCS neighbouring cell information</del>	<del>Not present</del>
<del>CHOICE mode</del>	<del>FDD</del>
<del>Qqualmin</del>	<del>Reference to table 6.1.1</del>
<del>Qrxlevmin</del>	<del>Reference to table 6.1.1</del>
<del>Cells for measurement</del>	<del>Not present</del>

**Test Procedure**

Table 8.4.1.11-1 illustrates the downlink power to be applied for the 2 cells in this test case.

Table 8.4.1.11-1

Parameter	Unit	Cell 1	Cell 4
UTRA RF Channel Number		Ch. 1	Ch. 2
CPICH Ec	dBm/ 3.84 MHz	-60	-70

The UE is in the CELL\_DCH state in cell 1. SS sends a MEASUREMENT CONTROL message on the downlink DCCH to request the UE to start inter-frequency measurement for cell 4's CPICH Ec/No value, and also to report the UTRA RSSI in the UARFCN in which cell 4 resides. Simultaneously, the stored transmission gap pattern sequence configuration associated with TGPSI=1 is indicated to be activated in this message. The UE shall transmit MEASUREMENT REPORT messages periodically at 16 seconds interval to report the RSSI value of UTRA carrier in which cell 4 resides. Next, SS sends a second MEASUREMENT CONTROL message. In this message, a new measurement task is to be established for the measurement and reporting of "GSM carrier RSSI" on a periodic basis. A deactivated transmission pattern gap sequence configuration (with TGPSI=2) is associated with this new measurement task.

The SS transmits a RADIO BEARER RECONFIGURATION message and commands the activation of transmission gap pattern sequence with TGPSI=2. The UE then shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC. In this message, the value of IE "failure-cause" shall be set to "compressed mode runtime error". The UE shall terminate all inter-RAT measurement tasks associated with TGPSI=2. The UE shall continue to send MEASUREMENT REPORT messages to report the UTRA RSSI in the UARFCN in which cell 4 resides.

**Expected sequence**

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_DCH state.

2	←	MEASUREMENT CONTROL	SS starts inter-frequency measurements for cell 4's CPICH Ec/No using transmission gap pattern sequence with TGPSI=1. SS commands UE to report the UTRA RSSI in the UARFCN in which cell 4 resides.
3	→	MEASUREMENT REPORT	UE reports UTRA RSSI for the UARFCN of cell 4 periodically.
4	←	MEASUREMENT CONTROL	SS assigns inter-RAT measurements for "GSM carrier RSSI". This measurement task is associated with transmission gap pattern sequence with TGPSI=2. The IE "TGPS status flag" is set to "deactivate".
5	←	RADIO BEARER RECONFIGURATION	SS specifies the parameters for transmission gap pattern sequence with TGPSI=2 and activates it simultaneously
6	→	RADIO BEARER RECONFIGURATION COMPLETE	
7			UE shall delete transmission gap pattern sequence configuration associated with TGPSI=2.
8	→	PHYSICAL CHANNEL RECONFIGURATION FAILURE	IE "Failure cause" shall be set to "Compressed mode runtime error"
9	→	MEASUREMENT REPORT	The contents shall be the same as that in step 3.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
—— Measurement Reporting Transfer Mode	Acknowledged Mode RLC
—— Periodic Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
—— Inter-frequency cell info list	
—— CHOICE inter-frequency cell removal	No inter-frequency cells removed

<del>—</del> New inter frequency info list	
<del>—</del> Inter frequency cell id	4
<del>—</del> Frequency info	
<del>—</del> UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 4
<del>—</del> UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 4
<del>—</del> Cell info	
<del>—</del> Cell individual offset	0 dB
<del>—</del> Reference time difference to cell	0 chips
<del>—</del> Read SFN Indicator	FALSE
<del>—</del> CHOICE Mode	FDD
<del>—</del> Primary CPICH Info	
<del>—</del> Primary Scrambling Code	Set to same code as used for cell 4
<del>—</del> Primary CPICH TX power	Not Present
<del>—</del> TX Diversity Indicator	FALSE
<del>—</del> Cells for measurement	
<del>—</del> Inter frequency cell id	4
<del>—</del> Inter frequency measurement quantity	
<del>—</del> CHOICE reporting criteria	Inter frequency reporting criteria
<del>—</del> Filter Coefficient	0
<del>—</del> Measurement quantity for frequency quality estimate	CPICH Ec/No
<del>—</del> Inter frequency reporting quantity	
<del>—</del> UTRA Carrier RSSI	TRUE
<del>—</del> Frequency quality estimate	FALSE
<del>—</del> Non frequency related cell reporting quantities	
<del>—</del> Cell synchronisation reporting indicator	FALSE
<del>—</del> Cell Identity reporting indicator	FALSE
<del>—</del> CPICH Ec/No reporting indicator	FALSE
<del>—</del> CPICH RSCP reporting indicator	FALSE
<del>—</del> Pathloss reporting indicator	FALSE
<del>—</del> Reporting cell status	
<del>—</del> CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
<del>—</del> Maximum number of reported cells	2
<del>—</del> Measurement validity	Not present

<del>Inter-frequency set update</del>	<del>Not present</del>
<del>CHOICE report criteria</del>	<del>Periodic reporting criteria</del>
<del>Amount of reporting</del>	<del>Infinity</del>
<del>Reporting interval</del>	<del>16 seconds</del>
<del>DPCCH compressed mode status info</del>	
<del>TGPS reconfiguration CFN</del>	<del>(Current CFN+(256-TTI/10msec)) mod 256</del>
<del>Transmission gap pattern sequence</del>	
<del>TGPSI</del>	<del>1</del>
<del>TGPS Status Flag</del>	<del>Activate</del>
<del>TGCFN</del>	<del>(Current CFN+(256-TTI/10msec)) mod 256</del>

## MEASUREMENT REPORT (Step 3 and Step 8)

<del>Information Element</del>	<del>Value/remark</del>
<del>Measurement identity</del>	<del>Check to see if set to "1"</del>
<del>Measured Results</del>	
<del>CHOICE measurement</del>	<del>Check to see if set to "Inter-frequency measured results list"</del>
<del>Inter-frequency measurement results</del>	
<del>Frequency info</del>	
<del>UARFCN (uplink)</del>	<del>Check to see if set to the UARFCN of the uplink frequency for cell 4</del>
<del>UARFCN (downlink)</del>	<del>Check to see if set to the UARFCN of the downlink frequency for cell 4</del>
<del>UTRA carrier RSSI</del>	<del>Check to see if it is present</del>
<del>Inter-frequency cell measurement results</del>	
<del>Cell measured results</del>	
<del>Cell Identity</del>	<del>Check to see if it is absent</del>
<del>Cell synchronisation information</del>	<del>Check to see if it is absent</del>
<del>Primary CPICH Info</del>	
<del>Primary Scrambling Code</del>	<del>Check to see if set to the same code for cell 4</del>
<del>CPICH Ec/No</del>	<del>Check to see if it is absent</del>
<del>CPICH RSCP</del>	<del>Check to see if it is absent</del>
<del>Pathloss</del>	<del>Check to see if it is absent</del>
<del>Measured Results on RACH</del>	<del>Check to see if it is absent</del>
<del>Event Results</del>	<del>Check to see if it is absent</del>

## MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Setup
Measurement Reporting Mode	
— Measurement Reporting Transfer Mode	Acknowledged Mode RLC
— Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
— inter-RAT measurement	
— inter-RAT measurement object list	
— CHOICE Inter-RAT Cell Removal	Remove no inter-RAT cells
— inter-RAT cell id	7
— CHOICE Radio Access Technology	GSM
— Cell individual offset	0
— Cell selection and re-selection info	Not present
— BSIC	BSIC1
— Band indicator	DCS-1800 band used
— BCCH ARFCN	+
— Cell for measurement	Not present
— inter-RAT measurement quantity	
— Measurement quantity for UTRAN quality estimate	Not present
— CHOICE system	GSM
— Measurement quantity	GSM carrier RSSI
— Filter coefficient	0
— BSIC verification required	not required
— inter-RAT reporting quantity	
— CHOICE system	GSM
— Observed time difference to to GSM	FALSE
— cell reporting indicator	
— GSM carrier RSSI reporting indicator	TRUE
— Reporting cell status	
— CHOICE reported cell	



<del>Reported cells within active set or within virtual active set or of the other RAT</del>	
<del>Maximum number of reported cells</del>	6
<del>CHOISE report criteria</del>	
<del>Periodical reporting criteria</del>	
<del>Amount of reporting</del>	infinity
<del>Reporting interval</del>	1000
Physical channel information elements	
<del>DPCH compressed mode status info</del>	
<del>TGPS reconfiguration CFN</del>	$(\text{Current CFN} + (256 - \text{TTI}/10\text{msec})) \bmod 256$
<del>Transmission gap pattern sequence</del>	
<del>TGPSI</del>	2
<del>TGPS status flag</del>	Deactivate
<del>TGCFN</del>	Not present

#### ~~RADIO BEARER RECONFIGURATION (Step 5)~~

~~The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL\_DCH from CELL\_DCH in PS" or "Non-speech in CS" or "Speech in CS" found in Annex A with the following exceptions:~~

<del>Information Element</del>	<del>Value/remark</del>
<del>DPCH compressed mode info</del>	
<del>TGPSI</del>	2
<del>TGPS Status Flag</del>	Activate
<del>TGCFN</del>	$(\text{Current CFN} + (256 - \text{TTI}/10\text{msec})) \bmod 256$
<del>Transmission gap pattern sequence configuration parameters</del>	
<del>TGMP</del>	GSM Carrier RSSI Measurement
<del>TGPRC</del>	62
<del>TGSN</del>	4
<del>TGL1</del>	7
<del>TGL2</del>	5
<del>TGD</del>	Undefined
<del>TGPL1</del>	3
<del>TGPL2</del>	5
<del>RPP</del>	Mode-0
<del>ITP</del>	Mode-0

<del>CHOICE UL/DL Mode</del>	<del>UL and DL</del>
<del>Downlink compressed mode method</del>	<del>SF/2</del>
<del>Uplink compressed mode method</del>	<del>SF/2</del>
<del>Downlink frame type</del>	<del>B</del>
<del>DeltaSIR1</del>	<del>2.0</del>
<del>DeltaSIRafter1</del>	<del>1.0</del>
<del>DeltaSIR2</del>	<del>Not Present</del>
<del>DeltaSIRafter2</del>	<del>Not Present</del>
<del>N identify abort</del>	<del>Not Present</del>
<del>T Reconfirm abort</del>	<del>Not Present</del>

#### ~~PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 8)~~

<del>Information Element</del>	<del>Value/remark</del>
<del>RRC transaction identifier</del>	<del>Not Present</del>
<del>Failure cause</del>	<del>Checked to see if set to "compressed mode runtime error"</del>
<del>Protocol error information</del>	<del>Checked to see if it is absent</del>
<del>Deleted TGPSI</del>	<del>Checked to see if it is set to "2"</del>

#### ~~8.4.1.11.5 Test requirement~~

~~After step 5 the UE shall send RADIO BEARER RECONFIGURATION COMPLETE message to the SS.~~

~~After step 6 the UE shall keep transmission gap pattern sequence configuration associated with TGPSI=1. It shall delete the transmission gap pattern sequence configuration associated with TGPSI=2, and delete the inter-RAT measurements corresponding to it. It shall transmit PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the uplink DCCH, with the IE "Failure cause" set to "Compressed mode runtime error".~~

~~After step 8 the UE shall continue to send MEASUREMENT REPORT messages periodically, to report the UTRA RSSI value for the UARFCN in which cell 4 resides. The MEASUREMENT REPORT messages sent by the UE shall not contain CPICH RSCP readings for cell 4.~~

#### ~~8.4.1.12 Measurement Control and Report: Compressed Mode Configuration Failure during transport channel reconfiguration procedure~~ **Void**

##### ~~8.4.1.12.1 Definition~~

##### ~~8.4.1.12.2 Conformance requirement~~

~~If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is included, the UE shall for each transmission gap pattern sequence perform the following consistency checks:~~

~~1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires UL compressed mode for measurements on any of the cells to be measured according to UE variable CELL\_INFO\_LIST, and CHOICE 'UL/DL mode' indicates 'DL only':~~

~~2> set the variable INVALID\_CONFIGURATION to TRUE.~~

~~1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires DL compressed mode for measurements on any of the cells to be measured according to UE variable CELL\_INFO\_LIST, and CHOICE 'UL/DL mode' indicates 'UL only':~~

~~2> set the variable INVALID\_CONFIGURATION to TRUE.~~

~~1> if UE already has an active transmission gap pattern sequence that, according to IE "TGMP", has the same measurement purpose, and both patterns will be active after the new configuration has been taken into use:~~

~~2> set the variable INVALID\_CONFIGURATION to TRUE.~~

If variable INVALID\_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

~~...~~

~~1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified below.~~

~~When the UE has received from the UTRAN the configurations of several compressed mode transmission gap pattern sequences, and if several of these patterns are to be simultaneously active, the UE shall check to see if these simultaneously active transmission gap pattern sequences create transmission gaps in the same frame. An illegal overlap is created if two or more transmission gap pattern sequences create transmission gaps in the same frame, irrespective of the gaps are created in uplink or downlink.~~

~~If the parallel transmission gap pattern sequences create an illegal overlap, the UE shall:~~

~~1> delete the overlapping transmission gap pattern sequence configuration stored in the variable TGPS\_IDENTITY, which is associated with the highest value of IE "TGPSI";~~

~~1> transmit a PHYSICAL\_CHANNEL\_RECONFIGURATION\_FAILURE message on the DCCH using AM RLC, setting the information elements as specified below:~~

~~2> not include the IE "RRC transaction identifier";~~

~~2> set the cause value in IE "failure cause" to value "compressed mode runtime error".~~

~~1> terminate the inter-frequency and/or inter-RAT measurements corresponding to the deleted transmission gap pattern sequence;~~

~~1> when the PHYSICAL\_CHANNEL\_RECONFIGURATION\_FAILURE message has been submitted to lower layers for transmission:~~

~~2> the procedure ends.~~

#### Reference

3GPP TS 25.331 clause 8.2.2, clause 8.2.11.2, clause 8.6.6.15

#### 8.4.1.12.3 Test purpose

~~1. To confirm that the UE transmits a PHYSICAL\_CHANNEL\_RECONFIGURATION\_FAILURE message on the uplink DCCH using AM RLC, if it receives a TRANSPORT\_CHANNEL\_RECONFIGURATION message which includes IE "DPCH compressed mode info" that causes an illegal overlap involving more than one parallel transmission gap pattern sequences.~~

~~2. To confirm that the UE terminate any measurements corresponding to the deleted transmission gap pattern sequence.~~

#### 8.4.1.12.4 Method of test

#### Initial Condition

System Simulator: 2 cells—Cell 1 and cell 4 are active.

UE: CS\_DCCH+DTCH\_DCH (State 6-9) or PS\_DCCH+DTCH\_DCH (State 6-10) as specified in TS34.108 clause 7.4, depending on the CN domain supported.

**Test Procedure**

For this test case, the downlink transmission power settings shall follow that specified in table 8.4.1.11.1 in clause 8.4.1.11.4.

The UE is in the CELL\_DCH state in cell 1. SS sends PHYSICAL\_CHANNEL\_RECONFIGURATION message to request UE to store compressed mode pattern. UE shall transmit a PYHSICAL\_CHANNEL\_RECONFIGURATION COMPLETE message. SS sends a MEASUREMENT\_CONTROL message on the downlink DCCH to request the UE to start inter-frequency measurement for cell 4's CPICH Ec/No value, and also to report the UTRA-RSSI in the UARFCN in which cell 4 resides. Simultaneously, the stored transmission gap pattern sequence configuration associated with TGPSI=1 is indicated to be activated in this message. The UE shall transmit MEASUREMENT\_REPORT messages periodically at 16 seconds interval to report the RSSI value of UTRA carrier in which cell 4 resides. Next, SS sends a second MEASUREMENT\_CONTROL message. In this message, a new measurement task is to be established for the measurement and reporting of "GSM carrier RSSI" on a periodic basis. A deactivated transmission gap sequence configuration (with TGPSI=2) is associated with this new measurement task.

The SS transmits a TRANSPORT\_CHANNEL\_RECONFIGURATION message and commands the activation of transmission gap pattern sequence with TGPSI=2. The UE then shall transmit a PHYSICAL\_CHANNEL\_RECONFIGURATION\_FAILURE message on the DCCH using AM-RLC. In this message, the value of IE "failure cause" shall be set to "compressed mode runtime error". The UE shall terminate all inter-RAT measurement tasks associated with TGPSI=2. The UE shall continue to send MEASUREMENT\_REPORT messages to report the UTRA-RSSI in the UARFCN in which cell 4 resides.

**Expected sequence**

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_DCH state.
1a	←		PHYSICAL_CHANNEL_RECONFIGURATION	SS specifies the parameters for transmission gap pattern sequence with TGPSI=1
1b	→		PHYSICAL_CHANNEL_RECONFIGURATION_COMPLETE	
2	←		MEASUREMENT_CONTROL	SS starts inter-frequency measurements for cell 4's CPICH Ec/No using transmission gap pattern sequence with TGPSI=1. Report the UTRA-RSSI in the UARFCN in which cell 4 resides.
3	→		MEASUREMENT_REPORT	UE reports UTRA-RSSI for the UARFCN of cell 4 periodically.
4	←		MEASUREMENT_CONTROL	SS assigns inter-RAT measurements for "GSM carrier RSSI". This measurement task is associated with transmission gap pattern sequence with TGPSI=2. The IE "TGPS status flag" is set to "Deactivate".

5	←	TRANSPORT CHANNEL RECONFIGURATION	SS specifies the parameters for transmission gap pattern sequence with TGPSI=2 and activates it simultaneously
6			UE shall delete transmission gap pattern sequence configuration associated with TGPSI=2.
7	→	PHYSICAL CHANNEL RECONFIGURATION FAILURE	IE "Failure cause" shall be set to "Compressed mode runtime error"
8	→	MEASUREMENT REPORT	The contents shall be the same as that in step 3.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1a)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL\_DCH from CELL\_DCH in PS" or "Non speech in CS" or "Speech in CS" found in clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
<del>DPCH compressed mode info</del>	
<del>TGPSI</del>	1
<del>TGPS Status Flag</del>	deactivate
<del>TGCFN</del>	Not Present
<del>Transmission gap pattern sequence configuration parameters</del>	
<del>TGMP</del>	FDD measurement
<del>TGPRC</del>	Infinity
<del>TGSN</del>	4
<del>TGL1</del>	7
<del>TGL2</del>	undefined
<del>TGD</del>	undefined
<del>TGPL1</del>	3
<del>TGPL2</del>	undefined
<del>RPP</del>	Mode 0
<del>ITP</del>	Mode 0
<del>CHOICE UL/DL Mode</del>	"UL and DL" or "UL only" or "DL only"
<del>Downlink compressed mode method</del>	SF/2 (this IE is present only if IE "CHOICE UL/DL Mode" is not set to "UL only")
<del>Uplink compressed mode method</del>	SF/2 (this IE is present only if IE "CHOICE UL/DL Mode" is not set to "DL only")

<del>Downlink frame type</del>	<del>B</del>
<del>DeltaSIR1</del>	<del>2.0</del>
<del>DeltaSIRafter1</del>	<del>1.0</del>
<del>DeltaSIR2</del>	<del>Not Present</del>
<del>DeltaSIRafter2</del>	<del>Not Present</del>
<del>N identify abort</del>	<del>Not Present</del>
<del>T Reconfirm abort</del>	<del>Not Present</del>

~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 1b)~~

~~Check that this message is similar to the same message type found in clause 9 of TS 34.108.~~

~~MEASUREMENT CONTROL (Step 2)~~

<del>Information Element</del>	<del>Value/remark</del>
<del>Measurement Identity</del>	<del>1</del>
<del>Measurement Command</del>	<del>Setup</del>
<del>Measurement Reporting Mode</del>	<del></del>
<del>Measurement Reporting Transfer Mode</del>	<del>Acknowledged Mode RLC</del>
<del>Periodic Reporting / Event Trigger Reporting Mode</del>	<del>Periodical Reporting</del>
<del>Additional measurements list</del>	<del>Not Present</del>
<del>CHOICE measurement type</del>	<del>Inter-frequency measurement</del>
<del>Inter-frequency cell info list</del>	<del></del>
<del>CHOICE inter-frequency cell removal</del>	<del>No inter-frequency cells removed</del>
<del>New inter-frequency info list</del>	<del></del>
<del>Inter-frequency cell id</del>	<del>4</del>
<del>Frequency info</del>	<del></del>
<del>UARFCN uplink (Nu)</del>	<del>UARFCN of the uplink frequency for cell 4</del>
<del>UARFCN downlink (Nd)</del>	<del>UARFCN of the downlink frequency for cell 4</del>
<del>Cell info</del>	<del></del>
<del>Cell individual offset</del>	<del>0 dB</del>
<del>Reference time difference to cell</del>	<del>Not Present</del>
<del>Read SFN Indicator</del>	<del>FALSE</del>
<del>CHOICE Mode</del>	<del>FDD</del>
<del>Primary CPICH Info</del>	<del></del>
<del>Primary Scrambling Code</del>	<del>Set to same code as used for cell 4</del>
<del>Primary CPICH TX power</del>	<del>Not Present</del>
<del>TX Diversity Indicator</del>	<del>FALSE</del>

<del>Cells for measurement</del>	
<del>Inter frequency cell id</del>	4
<del>Inter frequency measurement quantity</del>	
<del>CHOICE reporting criteria</del>	<del>Inter frequency reporting criteria</del>
<del>Filter Coefficient</del>	0
<del>Measurement quantity for frequency quality estimate</del>	CPICH Ec/No
<del>Inter frequency reporting quantity</del>	
<del>UTRA Carrier RSSI</del>	TRUE
<del>Frequency quality estimate</del>	FALSE
<del>Non frequency related cell reporting quantities</del>	
<del>Cell synchronisation information reporting indicator</del>	FALSE
<del>Cell Identity reporting indicator</del>	FALSE
<del>CPICH Ec/No reporting indicator</del>	FALSE
<del>CPICH RSCP reporting indicator</del>	FALSE
<del>Pathloss reporting indicator</del>	FALSE
<del>Reporting cell status</del>	
<del>CHOICE reported cell</del>	<del>Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency</del>
<del>Maximum number of reported cells</del>	2
<del>Measurement validity</del>	Not present
<del>Inter frequency set update</del>	Not present
<del>CHOICE report criteria</del>	Periodic reporting criteria
<del>Amount of reporting</del>	Infinity
<del>Reporting interval</del>	16 seconds
<del>DPCH compressed mode status info</del>	
<del>TGPS reconfiguration CFN</del>	<del>(Current CFN+(256-TTI/10msec)) mod 256</del>
<del>Transmission gap pattern sequence</del>	
<del>TGPSI</del>	1
<del>TGPS Status Flag</del>	Activate
<del>TGCFN</del>	<del>(Current CFN+(256-TTI/10msec)) mod 256</del>

## MEASUREMENT REPORT (Step 3 and Step 8)

Information Element	Value/remark
---------------------	--------------

Measurement identity	Check to see if set to "1"
<del>Measured Results</del>	
<del>CHOICE measurement</del>	Check to see if set to "Inter-frequency measured results list"
<del>Inter-frequency measurement results</del>	
<del>Frequency info</del>	
<del>UARFCN (uplink)</del>	Check to see if set to the UARFCN of the uplink frequency for cell 4
<del>UARFCN (downlink)</del>	Check to see if set to the UARFCN of the downlink frequency for cell 4
<del>UTRA carrier RSSI</del>	Check to see if it is present
<del>Inter-frequency cell measurement results</del>	
<del>Cell-measured results</del>	
<del>Cell Identity</del>	Check to see if it is absent
<del>Cell-synchronisation information</del>	Check to see if it is absent
<del>Primary CPICH Info</del>	
<del>Primary Scrambling Code</del>	Check to see if set to the same code for cell 4
<del>CPICH Ec/No</del>	Check to see if it is absent
<del>CPICH RSCP</del>	Check to see if it is absent
<del>Pathloss</del>	Check to see if it is absent
<del>Measured Results on RACH</del>	Check to see if it is absent
<del>Event Results</del>	Check to see if it is absent

MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Setup
Measurement Reporting Mode	
<del>Measurement Reporting Transfer Mode</del>	Acknowledged Mode RLC
<del>Periodic Reporting / Event Trigger Reporting Mode</del>	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
<del>inter-RAT measurement</del>	
<del>inter-RAT measurement object list</del>	
<del>CHOICE Inter-RAT Cell Removal</del>	Remove no inter-RAT cells
<del>inter-RAT cell id</del>	7



<del>CHOISE Radio Access Technology</del>	<del>GSM</del>
<del>Cell individual offset</del>	<del>0</del>
<del>Cell selection and re-selection info</del>	<del>Not present</del>
<del>BSIC</del>	<del>BSIC1</del>
<del>Band indicator</del>	<del>DCS-1800 band used</del>
<del>BCCH ARFCN</del>	<del>1</del>
<del>Cell for measurement</del>	<del>Not present</del>
<del>inter-RAT measurement quantity</del>	
<del>Measurement quantity for UTRAN quality estimate</del>	<del>Not present</del>
<del>CHOISE system</del>	<del>GSM</del>
<del>Measurement quantity</del>	<del>GSM carrier RSSI</del>
<del>Filter coefficient</del>	<del>0</del>
<del>BSIC verification required</del>	<del>not required</del>
<del>inter-RAT reporting quantity</del>	
<del>CHOISE system</del>	<del>GSM</del>
<del>Observed time difference to to GSM cell reporting indicator</del>	<del>FALSE</del>
<del>GSM carrier RSSI reporting indicator</del>	<del>TRUE</del>
<del>Reporting cell status</del>	
<del>CHOISE reported cell</del>	
<del>Reported cells within active set or within virtual active set or of the other RAT</del>	
<del>Maximum number of reported cells</del>	<del>6</del>
<del>CHOISE report criteria</del>	
<del>Periodical reporting criteria</del>	
<del>Amount of reporting</del>	<del>infinity</del>
<del>Reporting interval</del>	<del>1000</del>
<del>Physical channel information elements</del>	
<del>DPCH compressed mode status info</del>	
<del>TGPS reconfiguration CFN</del>	<del>(Current CFN + (256 - TTI/10msec)) mod 256</del>
<del>Transmission gap pattern sequence</del>	
<del>TGPSI</del>	<del>2</del>
<del>TGPS status flag</del>	<del>Deactivate</del>
<del>TGCFN</del>	<del>Not present</del>

**TRANSPORT CHANNEL RECONFIGURATION (Step 5)**

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL\_DCH from CELL\_DCH in PS" or "Non-speech in CS" or "Speech in CS" found in clause 9 of TS 34.108 with the following exceptions:

<b>Information Element</b>	<b>Value/remark</b>
<del>DPCH compressed mode info</del>	
<del>TGPSI</del>	<del>2</del>
<del>TGPS Status Flag</del>	<del>Activate</del>
<del>TGCFN</del>	<del>(Current CFN + (256 - TTI/10msec)) mod 256</del>
<del>Transmission gap pattern sequence configuration parameters</del>	
<del>TGMP</del>	<del>GSM Carrier RSSI Measurement</del>
<del>TGPRC</del>	<del>62</del>
<del>TGSN</del>	<del>4</del>
<del>TGL1</del>	<del>7</del>
<del>TGL2</del>	<del>5</del>
<del>TGD</del>	<del>undefined</del>
<del>TGPL1</del>	<del>3</del>
<del>TGPL2</del>	<del>5</del>
<del>RPP</del>	<del>Mode 0</del>
<del>ITP</del>	<del>Mode 0</del>
<del>CHOICE UL/DL Mode</del>	<del>"UL and DL" or "UL only" or "DL only"</del>
<del>Downlink compressed mode method</del>	<del>SF/2 (this IE is present only if IE "CHOICE UL/DL Mode" is not set to "UL only")</del>
<del>Uplink compressed mode method</del>	<del>SF/2 (this IE is present only if IE "CHOICE UL/DL Mode" is not set to "DL only")</del>
<del>Downlink frame type</del>	<del>B</del>
<del>DeltaSIR1</del>	<del>2.0</del>
<del>DeltaSIRafter1</del>	<del>1.0</del>
<del>DeltaSIR2</del>	<del>Not Present</del>
<del>DeltaSIRafter2</del>	<del>Not Present</del>
<del>N identify abort</del>	<del>Not Present</del>
<del>T Reconfirm abort</del>	<del>Not Present</del>

**PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 7)**

<b>Information Element</b>	<b>Value/remark</b>
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Failure cause	Checked to see if set to "compressed mode runtime error"
—— Protocol error information	Checked to see if it is absent
—— Deleted TGPSI	Checked to see if it is set to "2"

#### 8.4.1.12.5 Test requirement

After step 1a, UE shall transmit ~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~ message.

After step 2, UE shall transmit ~~MEASUREMENT REPORT~~ message according to the ~~MEASUREMENT CONTROL~~ message in step 2.

After step 6 the UE shall keep transmission gap pattern sequence configuration associated with TGPSI=1. It shall delete the transmission gap pattern sequence configuration associated with TGPSI=2, and delete the inter-RAT measurements corresponding to it. It shall transmit ~~PHYSICAL CHANNEL RECONFIGURATION FAILURE~~ message on the uplink DCCH, with the IE "Failure cause" set to "Compressed mode runtime error".

After step 7 the UE shall continue to send ~~MEASUREMENT REPORT~~ messages periodically, to report the UTRA RSSI value for the UARFCN in which cell 4 resides. The, ~~MEASUREMENT REPORT~~ messages sent by the UE shall not contain CPICH RSCP readings for cell 4.

### 8.4.1.13 Measurement Control and Report: Compressed Mode Configuration Failure during physical channel reconfiguration procedure **Void**

#### 8.4.1.13.1 Definition

#### 8.4.1.13.2 Conformance requirement

If the IE "DPCH-compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is included, the UE shall for each transmission gap pattern sequence perform the following consistency checks:

1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires UL compressed mode for measurements on any of the cells to be measured according to UE variable CELL\_INFO\_LIST, and CHOICE 'UL/DL mode' indicates 'DL only':

2> set the variable INVALID\_CONFIGURATION to TRUE.

1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires DL compressed mode for measurements on any of the cells to be measured according to UE variable CELL\_INFO\_LIST, and CHOICE 'UL/DL mode' indicates 'UL only':

2> set the variable INVALID\_CONFIGURATION to TRUE.

1> if UE already has an active transmission gap pattern sequence that, according to IE "TGMP", has the same measurement purpose, and both patterns will be active after the new configuration has been taken into use:

2> set the variable INVALID\_CONFIGURATION to TRUE.

If variable INVALID\_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

...

1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified below.

When the UE has received from the UTRAN the configurations of several compressed mode transmission gap pattern sequences, and if several of these patterns are to be simultaneously active, the UE shall check to see if these

simultaneously active transmission gap pattern sequences create transmission gaps in the same frame. An illegal overlap is created if two or more transmission gap pattern sequences create transmission gaps in the same frame, irrespective of the gaps are created in uplink or downlink.

~~If the parallel transmission gap pattern sequences create an illegal overlap, the UE shall:~~

~~1> delete the overlapping transmission gap pattern sequence configuration stored in the variable TGPS\_IDENTITY, which is associated with the highest value of IE "TGPSI";~~

~~1> transmit a PHYSICAL\_CHANNEL\_RECONFIGURATION\_FAILURE message on the DCCH using AM RLC, setting the information elements as specified below;~~

~~2> not include the IE "RRC transaction identifier";~~

~~2> set the cause value in IE "failure cause" to value "compressed mode runtime error".~~

~~1> terminate the inter-frequency and/or inter-RAT measurements corresponding to the deleted transmission gap pattern sequence;~~

~~1> when the PHYSICAL\_CHANNEL\_RECONFIGURATION\_FAILURE message has been submitted to lower layers for transmission:~~

~~2> the procedure ends.~~

#### Reference

3GPP TS 25.331 clause 8.2.2, clause 8.2.11.2, clause 8.6.6.14

#### 8.4.1.13.3 Test purpose

~~1. To confirm that the UE transmits a PHYSICAL\_CHANNEL\_RECONFIGURATION\_FAILURE message on the uplink DCCH using AM RLC, if it receives a PHYSICAL\_CHANNEL\_RECONFIGURATION message which includes IE "DPCH compressed mode info" that causes an illegal overlap involving more than one parallel transmission gap pattern sequences.~~

~~2. To confirm that the UE terminate any inter-frequency measurements corresponding to the deleted transmission gap pattern sequence.~~

#### 8.4.1.13.4 Method of test

##### Initial Condition

System Simulator: 2 cells—Cell 1 and cell 4 are active.

UE: CS-DCCH+DTCH\_DCH (State 6-9) or PS-DCCH+DTCH\_DCH (State 6-10) as specified in TS34.108 clause 7.4, depending on the CN domain supported.

##### Test Procedure

For this test case, the downlink transmission power settings shall follow that specified in table 8.4.1.11-1 in clause 8.4.1.11.4.

The UE is in the CELL\_DCH state in cell 1. SS sends a MEASUREMENT\_CONTROL message on the downlink DCCH to request the UE to start inter-frequency measurement for cell 4's CPICH E<sub>c</sub>/N<sub>0</sub> value, and also to report the UTRA RSSI in the UARFCN in which cell 4 resides. Simultaneously, the stored transmission gap pattern sequence configuration associated with TGPSI=1 is indicated to be activated in this message. The UE shall transmit MEASUREMENT\_REPORT messages periodically at 16 seconds interval to report the RSSI value of UTRA carrier in which cell 4 resides. Next, SS sends a second MEASUREMENT\_CONTROL message. In this message, a new measurement task is to be established for the measurement and reporting of "GSM carrier RSSI" value on a periodic basis. A deactivated transmission pattern gap sequence configuration (with TGPSI=2) is associated with this new measurement task.

The SS transmits a PHYSICAL\_CHANNEL\_RECONFIGURATION message and commands the activation of transmission gap pattern sequence with TGPSI=2. The UE then shall transmit a PHYSICAL\_CHANNEL\_RECONFIGURATION\_FAILURE message on the DCCH using AM RLC. In this message, the value of IE "failure cause" shall be set to "compressed mode runtime error". The UE shall terminate all inter-RAT measurement tasks

associated with TGPSI=2. The UE shall continue to send MEASUREMENT REPORT messages to report the UTRA RSSI in the UARFCN in which cell 4 resides.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_DCH state.
2	←		MEASUREMENT CONTROL	SS starts inter-frequency measurements for cell 4's CPICH Ec/No using transmission gap pattern sequence with TGPSI=1. SS commands UE to report the UTRA RSSI in the UARFCN in which cell 4 resides.
3	→		MEASUREMENT REPORT	UE reports UTRA RSSI for the UARFCN of cell 4 periodically.
4	←		MEASUREMENT CONTROL	SS assigns inter-frequency measurements for "GSM carrier RSSI". This measurement task is associated with transmission gap pattern sequence with TGPSI=2. The IE "TGPS status flag" is set to "Deactivate".
5	←		PHYSICAL CHANNEL RECONFIGURATION	SS specifies the parameters for transmission gap pattern sequence with TGPSI=2 and activates it simultaneously
6				UE shall delete transmission gap pattern sequence configuration associated with TGPSI=2.
7	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	IE "Failure cause" shall be set to "Compressed mode runtime error"
8	→		MEASUREMENT REPORT	The contents shall be the same as that in step 3.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
— Measurement Reporting Transfer Mode	Acknowledged Mode RLC

<del>Periodic Reporting / Event Trigger Reporting Mode</del>	<del>Periodical Reporting</del>
<del>Additional measurements list</del>	<del>Not Present</del>
<del>CHOICE measurement type</del>	<del>Inter frequency measurement</del>
<del>Inter frequency cell info list</del>	
<del>CHOICE inter frequency cell removal</del>	<del>No inter frequency cells removed</del>
<del>New inter frequency info list</del>	
<del>Inter frequency cell id</del>	<del>4</del>
<del>Frequency info</del>	
<del>UARFCN uplink (Nu)</del>	<del>UARFCN of the uplink frequency for cell 4</del>
<del>UARFCN downlink (Nd)</del>	<del>UARFCN of the downlink frequency for cell 4</del>
<del>Cell info</del>	
<del>Cell individual offset</del>	<del>0 dB</del>
<del>Reference time difference to cell</del>	<del>0 chips</del>
<del>Read SFN Indicator</del>	<del>FALSE</del>
<del>CHOICE Mode</del>	<del>FDD</del>
<del>Primary CPICH Info</del>	
<del>Primary Scrambling Code</del>	<del>Set to same code as used for cell 4</del>
<del>Primary CPICH TX power</del>	<del>Not Present</del>
<del>TX Diversity Indicator</del>	<del>FALSE</del>
<del>Cells for measurement</del>	
<del>Inter frequency cell id</del>	<del>4</del>
<del>Inter frequency measurement quantity</del>	
<del>CHOICE reporting criteria</del>	<del>Inter frequency reporting criteria</del>
<del>Filter Coefficient</del>	<del>0</del>
<del>Measurement quantity for frequency quality estimate</del>	<del>CPICH Ec/No</del>
<del>Inter frequency reporting quantity</del>	
<del>UTRA Carrier RSSI</del>	<del>TRUE</del>
<del>Frequency quality estimate</del>	<del>FALSE</del>
<del>Non frequency related cell reporting quantities</del>	
<del>Cell synchronisation information reporting indicator</del>	<del>FALSE</del>
<del>Cell Identity reporting indicator</del>	<del>FALSE</del>
<del>CPICH Ec/No reporting indicator</del>	<del>FALSE</del>
<del>CPICH RSCP reporting indicator</del>	<del>FALSE</del>

<del>Pathloss reporting indicator</del>	<del>FALSE</del>
<del>Reporting cell status</del>	
<del>CHOICE reported cell</del>	<del>Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency</del>
<del>Maximum number of reported cells</del>	<del>2</del>
<del>Measurement validity</del>	<del>Not present</del>
<del>Inter frequency set update</del>	<del>Not present</del>
<del>CHOICE report criteria</del>	<del>Periodic reporting criteria</del>
<del>Amount of reporting</del>	<del>Infinity</del>
<del>Reporting interval</del>	<del>16 seconds</del>
<del>DPCCH compressed mode status info</del>	
<del>TGPS reconfiguration CFN</del>	<del>(Current CFN+(256-TTI/10msec)) mod 256</del>
<del>Transmission gap pattern sequence</del>	
<del>TGPSI</del>	<del>1</del>
<del>TGPS Status Flag</del>	<del>Activate</del>
<del>TGCFN</del>	<del>(Current CFN+(256-TTI/10msec)) mod 256</del>

## MEASUREMENT REPORT (Step 3 and Step 8)

Information Element	Value/remark
<del>Measurement identity</del>	<del>Check to see if set to "1"</del>
<del>Measured Results</del>	
<del>CHOICE measurement</del>	<del>Check to see if set to "Inter frequency measured results list"</del>
<del>Inter frequency measurement results</del>	
<del>Frequency info</del>	
<del>UARFCN (uplink)</del>	<del>Check to see if set to the UARFCN of the uplink frequency for cell 4</del>
<del>UARFCN (downlink)</del>	<del>Check to see if set to the UARFCN of the downlink frequency for cell 4</del>
<del>UTRA carrier RSSI</del>	<del>Check to see if it is present</del>
<del>Inter frequency cell measurement results</del>	
<del>Cell measured results</del>	
<del>Cell Identity</del>	<del>Check to see if it is absent</del>
<del>Cell synchronisation information</del>	<del>Check to see if it is absent</del>
<del>Primary CPICH Info</del>	

<del>Primary Scrambling Code</del>	<del>Check to see if set to the same code for cell 4</del>
<del>CPICH Ec/No</del>	<del>Check to see if it is absent</del>
<del>CPICH RSCP</del>	<del>Check to see if it is absent</del>
<del>Pathloss</del>	<del>Check to see if it is absent</del>
<del>Measured Results on RACH</del>	<del>Check to see if it is absent</del>
<del>Event Results</del>	<del>Check to see if it is absent</del>

## MEASUREMENT CONTROL (Step 4)

<b>Information Element</b>	<b>Value/remark</b>
Measurement Identity	2
Measurement Command	Setup
Measurement Reporting Mode	
<del>Measurement Reporting Transfer Mode</del>	<del>Acknowledged Mode RLC</del>
<del>Periodic Reporting / Event Trigger Reporting Mode</del>	<del>Periodical reporting</del>
Additional measurements list	Not Present
CHOICE measurement type	
<del>inter-RAT measurement</del>	
<del>inter-RAT measurement object list</del>	
<del>CHOICE Inter-RAT Cell Removal</del>	<del>Remove no inter-RAT cells</del>
<del>inter-RAT cell id</del>	<del>7</del>
<del>CHOICE Radio Access Technology</del>	<del>GSM</del>
<del>Cell individual offset</del>	<del>0</del>
<del>Cell selection and re-selection info</del>	<del>Not present</del>
<del>BSIC</del>	<del>BSIC1</del>
<del>Band indicator</del>	<del>DCS-1800 band used</del>
<del>BCCH ARFCN</del>	<del>1</del>
<del>Cell for measurement</del>	<del>Not present</del>
<del>inter-RAT measurement quantity</del>	
<del>Measurement quantity for UTRAN quality estimate</del>	<del>Not present</del>
<del>CHOICE system</del>	<del>GSM</del>
<del>Measurement quantity</del>	<del>GSM carrier RSSI</del>
<del>Filter coefficient</del>	<del>0</del>
<del>BSIC verification required</del>	<del>not required</del>
<del>inter-RAT reporting quantity</del>	



<del>CHOISE system</del>	<del>GSM</del>
<del>Observed time difference to to GSM cell reporting indicator</del>	<del>FALSE</del>
<del>GSM carrier RSSI reporting indicator</del>	<del>TRUE</del>
<del>Reporting cell status</del>	
<del>CHOISE reported cell</del>	
<del>Reported cells within active set or within virtual active set or of the other RAT</del>	
<del>Maximum number of reported cells</del>	<del>6</del>
<del>CHOISE report criteria</del>	
<del>Periodical reporting criteria</del>	
<del>Amount of reporting</del>	<del>infinity</del>
<del>Reporting interval</del>	<del>1000</del>
<del>Physical channel information elements</del>	
<del>DPCH compressed mode status info</del>	
<del>TGPS reconfiguration CFN</del>	<del>(Current CFN + (256 - TTI/10msec)) mod 256</del>
<del>Transmission gap pattern sequence</del>	
<del>TGPSI</del>	<del>2</del>
<del>TGPS status flag</del>	<del>Deactivate</del>
<del>TGCFN</del>	<del>Not present</del>

#### ~~PHYSICAL CHANNEL RECONFIGURATION (Step 5)~~

~~The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL\_DCH from CELL\_DCH in PS" or "Non speech in CS" or "Speech in CS" found in Annex A with the following exceptions:~~

<del>Information Element</del>	<del>Value/remark</del>
<del>DPCH compressed mode info</del>	
<del>TGPSI</del>	<del>2</del>
<del>TGPS Status Flag</del>	<del>Activate</del>
<del>TGCFN</del>	<del>(Current CFN + (256 - TTI/10msec)) mod 256</del>
<del>Transmission gap pattern sequence configuration parameters</del>	
<del>TGMP</del>	<del>FDD Measurement</del>
<del>TGPRC</del>	<del>62</del>
<del>TGSN</del>	<del>4</del>
<del>TGLI</del>	<del>7</del>

<del>————</del> TGL2	5
<del>————</del> TGD	undefined
<del>————</del> TGPL1	3
<del>————</del> TGPL2	5
<del>————</del> RPP	Mode-0
<del>————</del> ITP	Mode-0
<del>————</del> CHOICE UL/DL Mode	UL and DL
<del>————</del> Downlink compressed mode method	SF/2
<del>————</del> Uplink compressed mode method	SF/2
<del>————</del> Downlink frame type	B
<del>————</del> DeltaSIR1	2.0
<del>————</del> DeltaSIRafter1	1.0
<del>————</del> DeltaSIR2	Not Present
<del>————</del> DeltaSIRafter2	Not Present
<del>————</del> N identify abort	Not Present
<del>————</del> T Reconfirm abort	Not Present

#### ~~PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 7)~~

<del>Information Element</del>	<del>Value/remark</del>
<del>Failure cause</del>	<del>Checked to see if set to "compressed mode runtime error"</del>
<del>———— Protocol error information</del>	<del>Checked to see if it is absent</del>
<del>———— Deleted TGPSI</del>	<del>Checked to see if it is set to "2"</del>

#### ~~8.4.1.13.5 Test requirement~~

~~After step 6 the UE shall keep transmission gap pattern sequence configuration associated with TGPSI=1. It shall delete the transmission gap pattern sequence configuration associated with TGPSI=2, and delete the inter-RAT measurements corresponding to it. It shall transmit PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the uplink DCCH, with the IE "Failure cause" set to "Compressed mode runtime error".~~

~~After step 7 the UE shall continue to send MEASUREMENT REPORT messages periodically, to report the UTRA-RSSI value for the UARFCN in which cell 4 resides. The MEASUREMENT REPORT messages sent by the UE shall not contain the CPICH-RSCP readings for cell 4.~~

## CHANGE REQUEST

# 34.123-1 CR 606 # rev 1 # Current version: 5.5.0 #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	# New RRC test case on soft handover for multiple radio links		
<b>Source:</b>	# Ericsson, Telecom Italia S.p.A.		
<b>Work item code:</b>	# TEI	<b>Date:</b>	# 6/11/2003
<b>Category:</b>	# <b>F</b>	<b>Release:</b>	# REL-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	# The test coverage for active set update needs to be increased to verify that the UE is able to handle more than 2 simultaneous radio links in the active set.
<b>Summary of change:</b>	# New test case:  8.3.4.8 Active set update in soft handover: Radio Link addition in multiple radio link environment Test case to verify that the UE is able to communicate with all radio links in the active set and keeps the connection when some of the radio links are faded out.
<b>Consequences if not approved:</b>	# Insufficient test coverage

<b>Clauses affected:</b>	# 8.3.4.8 (new)										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	#	34.123-2
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<b>Other comments:</b>	# Affects REL-5, REL-4 and R99.										

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

### 8.3.4.8 Active set update in soft handover: Radio Link addition in multiple radio link environment

#### 8.3.4.8.1 Definition

#### 8.3.4.8.2 Conformance requirement

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified otherwise in the following. The UE shall:

- 1> first add the RLS indicated in the IE "Radio Link Addition Information";
- 1> perform the physical layer synchronisation procedure B as specified in TS 25.214;
- 1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronization B, specified in TS 25.214;

...

#### Reference

3GPP TS 25.331 clause 8.3.4

#### 8.3.4.8.3 Test purpose

To confirm that the UE communicates with the SS on all radio link in the active set and keeps the connection when some of the radio links are faded out.

#### 8.3.4.8.4 Method of test

#### Initial Condition

System Simulator: 4 cells - Cell 1, 2, 3 and 7 are active. The chip-timing between the cells shall always be within  $\pm 148$  chip.

UE: CS-DCCH+DTCH\_DCH (state 6-9) or PS-DCCH+DTCH\_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

Test Procedure**Table 8.3.4.8-1**

<u>Cell</u>	<u>UTRA RF Channel Number</u>
<u>Cell 1</u>	<u>Ch. 1</u>
<u>Cell 2</u>	<u>Ch. 1</u>
<u>Cell 3</u>	<u>Ch. 1</u>
<u>Cell 7</u>	<u>Ch. 1</u>

**Table 8.3.4.8-2**

<u>Parameter</u>	<u>Unit</u>	<u>Time</u>							
		<u>T0</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T5</u>	<u>T6</u>	<u>T7</u>
<u>Cell 1 CPICH Ec</u>	<u>dBm/3.84MHz</u>	<u>-60</u>	<u>-60</u>	<u>-60</u>	<u>-60</u>	<u>-75</u>	<u>-75</u>	<u>-75</u>	<u>-60</u>
<u>Cell 2 CPICH Ec</u>	<u>dBm/3.84MHz</u>	<u>-75</u>	<u>-60</u>	<u>-60</u>	<u>-60</u>	<u>-60</u>	<u>-75</u>	<u>-75</u>	<u>-75</u>
<u>Cell 3 CPICH Ec</u>	<u>dBm/3.84MHz</u>	<u>-75</u>	<u>-75</u>	<u>-60</u>	<u>-60</u>	<u>-60</u>	<u>-60</u>	<u>-75</u>	<u>-75</u>
<u>Cell 7 CPICH Ec</u>	<u>dBm/3.84MHz</u>	<u>-75</u>	<u>-75</u>	<u>-75</u>	<u>-60</u>	<u>-60</u>	<u>-60</u>	<u>-60</u>	<u>-75</u>

Table 8.3.4.8-1 defines the UTRA RF Channel Number for the different cells. Table 8.3.4.8-2 illustrates the downlink power to be applied for the 4 cells at various time instants of the test execution.

Initially, the UE goes to connected mode and establishes a radio access bearer in CELL\_DCH state in cell 1.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.8-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2, according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID).

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC without waiting for the physical channel synchronisation B.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 1 and cell 2. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.8-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 3, according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 3 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 and cell 2 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID).

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC without waiting for the physical channel synchronisation B.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 1, cell 2 and cell 3. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.8-2. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 7, according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 7 and then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1, cell 2 and cell 3 on DCCH

using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID).

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC without waiting for the physical channel synchronisation B.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 1, cell 2, cell 3 and cell 7. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.8-2. The UE shall continue to communicate through at least cell 2, cell 3 and cell 7. The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 1.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 2, cell 3 and cell 7. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T5" in table 8.3.4.8-2. The UE shall continue to communicate through at least cell 3 and cell 7. The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 2.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 3 and cell 7. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T6" in table 8.3.4.8-2. The UE shall continue to communicate through at least cell 7. The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 3.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 7. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM.

SS configures its downlink transmission power settings according to columns "T7" in table 8.3.4.8-2. The UE shall continue to communicate through at least cell 1. The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 7.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 1. The UE shall transmit a UE CAPABILITY ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.8-2.
2		→	MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 2)
3		←	ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information". (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio link with Primary CPICH info used for the reference ID in cell 2)
4		→	ACTIVE SET UPDATE COMPLETE	The UE shall configure new radio link to cell 2 without interfering with existing connections on the radio link in cell 1.
5		←	UE CAPABILITY ENQUIRY	Use default message. Sent on cell 1 and cell 2.
6		→	UE CAPABILITY INFORMATION	Use default message.
7		←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
8				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.8-2.
9		→	MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 3)
10		←	ACTIVE SET UPDATE	SS transmits this message in cell 1 and cell 2 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information". (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio link with Primary CPICH info used for the reference ID in cell 3)
11		→	ACTIVE SET UPDATE COMPLETE	The UE shall configure new radio link to cell 3 without interfering with existing connections on the radio links in cell 1 and cell 2.
12		←	UE CAPABILITY ENQUIRY	Use default message. Sent on cell 1, cell 2 and cell 3.
13		→	UE CAPABILITY INFORMATION	Use default message.
14		←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
15				SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.8-2.
16		→	MEASUREMENT REPORT	See specific message contents for this message (event '1a' for cell 7)
17		←	ACTIVE SET UPDATE	SS transmits this message in cell 1, cell 2 and cell 3 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information". (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio link with Primary CPICH info used for the reference ID in cell 7)
18		→	ACTIVE SET UPDATE COMPLETE	The UE shall configure new radio link to cell 7 without interfering with existing connections on the radio links in cell 1, cell 2 and cell 3.
19		←	UE CAPABILITY ENQUIRY	Use default message. Sent on cell 1, cell 2, cell 3 and cell 7.
20		→	UE CAPABILITY INFORMATION	Use default message.
21		←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
22				SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.8-2.



<a href="#">23</a>	<a href="#">→</a>	<a href="#">MEASUREMENT REPORT</a>	<a href="#">See specific message contents for this message (event '1b' for Cell 1)</a>
<a href="#">24</a>	<a href="#">←</a>	<a href="#">UE CAPABILITY ENQUIRY</a>	<a href="#">Use default message. Sent on cell 2, cell 3 and cell 7.</a>
<a href="#">25</a>	<a href="#">→</a>	<a href="#">UE CAPABILITY INFORMATION</a>	<a href="#">Use default message.</a>
<a href="#">26</a>	<a href="#">←</a>	<a href="#">UE CAPABILITY INFORMATION CONFIRM</a>	<a href="#">Use default message.</a>
<a href="#">27</a>			<a href="#">SS configures its downlink transmission power settings according to columns "T5" in table 8.3.4.8-2.</a>
<a href="#">28</a>	<a href="#">→</a>	<a href="#">MEASUREMENT REPORT</a>	<a href="#">See specific message contents for this message (event '1b' for Cell 2)</a>
<a href="#">29</a>	<a href="#">←</a>	<a href="#">UE CAPABILITY ENQUIRY</a>	<a href="#">Use default message. Sent on cell 3 and cell 7.</a>
<a href="#">30</a>	<a href="#">→</a>	<a href="#">UE CAPABILITY INFORMATION</a>	<a href="#">Use default message.</a>
<a href="#">31</a>	<a href="#">←</a>	<a href="#">UE CAPABILITY INFORMATION CONFIRM</a>	<a href="#">Use default message.</a>
<a href="#">32</a>			<a href="#">SS configures its downlink transmission power settings according to columns "T6" in table 8.3.4.8-2.</a>
<a href="#">33</a>	<a href="#">→</a>	<a href="#">MEASUREMENT REPORT</a>	<a href="#">See specific message contents for this message (event '1b' for Cell 3)</a>
<a href="#">34</a>	<a href="#">←</a>	<a href="#">UE CAPABILITY ENQUIRY</a>	<a href="#">Use default message. Sent on cell 7.</a>
<a href="#">35</a>	<a href="#">→</a>	<a href="#">UE CAPABILITY INFORMATION</a>	<a href="#">Use default message.</a>
<a href="#">36</a>	<a href="#">←</a>	<a href="#">UE CAPABILITY INFORMATION CONFIRM</a>	<a href="#">Use default message.</a>
<a href="#">37</a>			<a href="#">SS configures its downlink transmission power settings according to columns "T7" in table 8.3.4.8-2.</a>
<a href="#">38</a>	<a href="#">→</a>	<a href="#">MEASUREMENT REPORT</a>	<a href="#">See specific message contents for this message (event '1b' for cell 7)</a>
<a href="#">39</a>	<a href="#">←</a>	<a href="#">UE CAPABILITY ENQUIRY</a>	<a href="#">Use default message. Sent on cell 1.</a>
<a href="#">40</a>	<a href="#">→</a>	<a href="#">UE CAPABILITY INFORMATION</a>	<a href="#">Use default message.</a>
<a href="#">41</a>	<a href="#">←</a>	<a href="#">UE CAPABILITY INFORMATION CONFIRM</a>	<a href="#">Use default message.</a>
<a href="#">42</a>	<a href="#">↔</a>	<a href="#">CALL C.3</a>	<a href="#">If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.</a>

### Specific Message Content

The contents of SIB11 broadcasted in cell 1 shall be in accordance with the default SIB11 as specified in section 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Intra-frequency measurement reporting criteria	3 kinds
- Parameters required for each event	1a
- Intra-frequency event identity	Not Present
- Triggering condition 1	Monitored set cells
- Triggering condition 2	5dB
- Reporting Range Constant	Not Present
- Cells forbidden to affect Reporting range	0.0
- W	0.0
- Hysteresis	Not Present
- Threshold Used Frequency	2
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	640
- Time to trigger	4
- Amount of reporting	4000
- Reporting interval	Report cell within active set and/or monitored set cells on used frequency
- Reporting cell status	3
- CHOICE reported cell	1b
- Maximum number of reported cells	Active set cells
- Intra-frequency event identity	Not Present
- Triggering condition 1	5dB
- Triggering condition 2	Not Present
- Reporting Range Constant	0.0
- Cells forbidden to affect Reporting range	0.0
- W	Not Present
- Hysteresis	Not Present
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	640
- Time to trigger	Not Present
- Amount of reporting	Not Present
- Reporting interval	Report cell within active set and/or monitored set cells on used frequency
- Reporting cell status	3
- CHOICE reported cell	
- Maximum number of reported cells	

The contents of SIB12 in cell 1, and SIB11 and SIB12 in cell 2, cell 3, and cell 7 shall be in accordance with the default SIBs as specified in TS 34.108.

## MEASUREMENT REPORT (Step 2)

<u>Information Element</u>	<u>Value/remark</u>
<u>Message Type</u> <u>Integrity check info</u> - Message authentication code  - RRC Message sequence number  <u>Measurement identity</u> <u>Measured Results</u> - Intra-frequency measured results	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. 1
- Cell measured results - Cell Identity - Cell synchronisation information - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 1. See Note 1 Checked that this IE is absent Checked that this IE is absent  Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
- Cell measured results - Cell Identity - Cell synchronisation information  - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 2. See Note 1 Checked that this IE is absent Checked that this IE is present and includes IE COUNT-C-SFN frame difference  Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
- Cell measured results - Cell Identity - Cell synchronisation information  - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 3. See Note 2 Checked that this IE is absent Checked that this IE is present and includes IE COUNT-C-SFN frame difference  Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
- Cell measured results - Cell Identity - Cell synchronisation information  - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 7. See Note 2 Checked that this IE is absent Checked that this IE is present and includes IE COUNT-C-SFN frame difference  Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
<u>Measured results on RACH</u> <u>Additional measured results</u> <u>Event results</u> - Intra-frequency measurement event results - Intra-frequency event identity - Cell measurement event results - Primary CPICH info - Primary scrambling code	Checked that this IE is absent Checked that this IE is absent  1a  Cell 2. Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1 and 2 may appear in any order.

NOTE 2: Cell measured results for cells 3 and 7 may or may not be present (depends upon the capability of the UE and test uncertainties in power level). If present they may appear in any order.

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>Radio link addition information</u>	<u>Cell 2</u>
<u>- Primary CPICH Info</u>	<u>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108</u>
<u>- Primary Scrambling Code</u>	<u>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108</u>
<u>- Downlink DPCH info for each RL</u>	<u>FDD</u>
<u>- CHOICE mode</u>	<u>P-CPICH can be used.</u>
<u>- Primary CPICH usage for channel estimation</u>	<u>Calculated value from Cell synchronisation information</u>
<u>- DPCH frame offset</u>	<u>Not Present</u>
<u>- Secondary CPICH info</u>	<u>This IE is repeated for all existing downlink DPCHs allocated to the UE</u>
<u>- DL channelisation code</u>	<u>1</u>
<u>- Secondary scrambling code</u>	<u>Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"</u>
<u>- Spreading factor</u>	<u>For each DPCH, assign the same code number in the current code given in cell 1.</u>
<u>- Code Number</u>	<u>Not Present</u>
<u>- Scrambling code change</u>	<u>0</u>
<u>- TPC Combination Index</u>	<u>Not Present</u>
<u>- SSST Cell Identity</u>	<u>Not Present</u>
<u>- Close loop timing adjustment mode</u>	<u>Not Present</u>
<u>- TFCI Combining Indicator</u>	<u>Not Present</u>
<u>- SCCPCH information for FACH</u>	<u>Not Present</u>

MEASUREMENT REPORT (Step 9)

Information Element	Value/remark
<p><u>Message Type</u>  <u>Integrity check info</u>                      - <u>Message authentication code</u></p> <p>- <u>RRC Message sequence number</u></p> <p><u>Measurement identity</u>  <u>Measured Results</u>                      - <u>Intra-frequency measured results</u></p>	<p>This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.</p> <p>This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.</p> <p>1</p>
<p>- <u>Cell measured results</u>                      - <u>Cell Identity</u>                      - <u>Cell synchronisation information</u>                      - <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p> <p>- <u>CPICH Ec/N0</u>                      - <u>CPICH RSCP</u>                      - <u>Pathloss</u></p>	<p>Cell 1. See Note 1                      Checked that this IE is absent                      Checked that this IE is absent</p> <p>Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108                      Checked that this IE is absent                      Checked that this IE is present                      Checked that this IE is absent</p>
<p>- <u>Cell measured results</u>                      - <u>Cell Identity</u>                      - <u>Cell synchronisation information</u>                      - <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p> <p>- <u>CPICH Ec/N0</u>                      - <u>CPICH RSCP</u>                      - <u>Pathloss</u></p>	<p>Cell 2. See Note 1                      Checked that this IE is absent                      Checked that this IE is absent</p> <p>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108                      Checked that this IE is absent                      Checked that this IE is present                      Checked that this IE is absent</p>
<p>- <u>Cell measured results</u>                      - <u>Cell Identity</u>                      - <u>Cell synchronisation information</u></p> <p>- <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p> <p>- <u>CPICH Ec/N0</u>                      - <u>CPICH RSCP</u>                      - <u>Pathloss</u></p>	<p>Cell 3. See Note 1                      Checked that this IE is absent                      Checked that this IE is present and includes IE COUNT-C-SFN frame difference</p> <p>Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108                      Checked that this IE is absent                      Checked that this IE is present                      Checked that this IE is absent</p>
<p>- <u>Cell measured results</u>                      - <u>Cell Identity</u>                      - <u>Cell synchronisation information</u></p> <p>- <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p> <p>- <u>CPICH Ec/N0</u>                      - <u>CPICH RSCP</u>                      - <u>Pathloss</u></p>	<p>Cell 7. See Note 2                      Checked that this IE is absent                      Checked that this IE is present and includes IE COUNT-C-SFN frame difference</p> <p>Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108                      Checked that this IE is absent                      Checked that this IE is present                      Checked that this IE is absent</p>
<p><u>Measured results on RACH</u>  <u>Additional measured results</u>  <u>Event results</u>                      - <u>Intra-frequency measurement event results</u>                      - <u>Intra-frequency event identity</u>                      - <u>Cell measurement event results</u>                      - <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p>	<p>Checked that this IE is absent                      Checked that this IE is absent</p> <p>1a</p> <p>Cell 3.                      Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108</p>

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order.

NOTE 2: Cell measured results for cell 7 may or may not be present (depends upon the capability of the UE and test uncertainties in power level).

ACTIVE SET UPDATE (Step 10)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>Radio link addition information</u>	<u>Cell 3</u>
<u>- Primary CPICH Info</u>	<u>Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108</u>
<u>- Primary Scrambling Code</u>	<u>Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108</u>
<u>- Downlink DPCH info for each RL</u>	<u>FDD</u>
<u>- CHOICE mode</u>	<u>P-CPICH can be used.</u>
<u>- Primary CPICH usage for channel estimation</u>	<u>Calculated value from Cell synchronisation information</u>
<u>- DPCH frame offset</u>	<u>Not Present</u>
<u>- Secondary CPICH info</u>	<u>This IE is repeated for all existing downlink DPCHs allocated to the UE</u>
<u>- DL channelisation code</u>	<u>1</u>
<u>- Secondary scrambling code</u>	<u>Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"</u>
<u>- Spreading factor</u>	<u>For each DPCH, assign the same code number in the current code given in cell 1.</u>
<u>- Code Number</u>	<u>Not Present</u>
<u>- Scrambling code change</u>	<u>0</u>
<u>- TPC Combination Index</u>	<u>Not Present</u>
<u>- SSDT Cell Identity</u>	<u>Not Present</u>
<u>- Close loop timing adjustment mode</u>	<u>Not Present</u>
<u>- TFCI Combining Indicator</u>	<u>Not Present</u>
<u>- SCCPCH information for FACH</u>	<u>Not Present</u>

## MEASUREMENT REPORT (Step 16)

Information Element	Value/remark
<u>Message Type</u> <u>Integrity check info</u> - Message authentication code  - RRC Message sequence number  <u>Measurement identity</u> <u>Measured Results</u> - Intra-frequency measured results	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. 1
- Cell measured results - Cell Identity - Cell synchronisation information - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 1. See Note 1 Checked that this IE is absent Checked that this IE is absent  Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
- Cell measured results - Cell Identity - Cell synchronisation information - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 2. See Note 1 Checked that this IE is absent Checked that this IE is absent  Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
- Cell measured results - Cell Identity - Cell synchronisation information - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 3. See Note 1 Checked that this IE is absent Checked that this IE is absent  Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
- Cell measured results - Cell Identity - Cell synchronisation information  - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 7. See Note 1 Checked that this IE is absent Checked that this IE is present and includes IE COUNT-C-SFN frame difference  Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
<u>Measured results on RACH</u> <u>Additional measured results</u> <u>Event results</u> - Intra-frequency measurement event results - Intra-frequency event identity - Cell measurement event results - Primary CPICH info - Primary scrambling code	Checked that this IE is absent Checked that this IE is absent  1a  Cell 7. Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2, 3 and 7 may appear in any order.

ACTIVE SET UPDATE (Step 17)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>Radio link addition information</u>	<u>Cell 7</u>
<u>- Primary CPICH Info</u>	<u>Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108</u>
<u>- Primary Scrambling Code</u>	<u>Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108</u>
<u>- Downlink DPCH info for each RL</u>	<u>FDD</u>
<u>- CHOICE mode</u>	<u>P-CPICH can be used.</u>
<u>- Primary CPICH usage for channel estimation</u>	<u>Calculated value from Cell synchronisation information</u>
<u>- DPCH frame offset</u>	<u>Not Present</u>
<u>- Secondary CPICH info</u>	<u>This IE is repeated for all existing downlink DPCHs allocated to the UE</u>
<u>- DL channelisation code</u>	<u>1</u>
<u>- Secondary scrambling code</u>	<u>Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"</u>
<u>- Spreading factor</u>	<u>For each DPCH, assign the same code number in the current code given in cell 1.</u>
<u>- Code Number</u>	<u>Not Present</u>
<u>- Scrambling code change</u>	<u>0</u>
<u>- TPC Combination Index</u>	<u>Not Present</u>
<u>- SSDT Cell Identity</u>	<u>Not Present</u>
<u>- Close loop timing adjustment mode</u>	<u>Not Present</u>
<u>- TFCI Combining Indicator</u>	<u>Not Present</u>
<u>- SCCPCH information for FACH</u>	<u>Not Present</u>



MEASUREMENT REPORT (Step 23)

Information Element	Value/remark
<p><u>Message Type</u>  <u>Integrity check info</u>                      - <u>Message authentication code</u></p> <p>- <u>RRC Message sequence number</u></p> <p><u>Measurement identity</u>  <u>Measured Results</u>                      - <u>Intra-frequency measured results</u></p>	<p>This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.</p> <p>This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.</p> <p>1</p>
<p>- <u>Cell measured results</u>                      - <u>Cell Identity</u>                      - <u>Cell synchronisation information</u>                      - <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p> <p>- <u>CPICH Ec/N0</u>                      - <u>CPICH RSCP</u>                      - <u>Pathloss</u></p>	<p>Cell 2. See Note 1.                      Checked that this IE is absent                      Checked that this IE is absent</p> <p>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108                      Checked that this IE is absent                      Checked that this IE is present                      Checked that this IE is absent</p>
<p>- <u>Cell measured results</u>                      - <u>Cell Identity</u>                      - <u>Cell synchronisation information</u>                      - <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p> <p>- <u>CPICH Ec/N0</u>                      - <u>CPICH RSCP</u>                      - <u>Pathloss</u></p>	<p>Cell 3. See Note 1                      Checked that this IE is absent                      Checked that this IE is absent</p> <p>Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108                      Checked that this IE is absent                      Checked that this IE is present                      Checked that this IE is absent</p>
<p>- <u>Cell measured results</u>                      - <u>Cell Identity</u>                      - <u>Cell synchronisation information</u></p> <p>- <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p> <p>- <u>CPICH Ec/N0</u>                      - <u>CPICH RSCP</u>                      - <u>Pathloss</u></p>	<p>Cell 7. See Note 1                      Checked that this IE is absent                      Checked that this IE is present and includes IE COUNT-C-SFN frame difference</p> <p>Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108                      Checked that this IE is absent                      Checked that this IE is present                      Checked that this IE is absent</p>
<p>- <u>Cell measured results</u>                      - <u>Cell Identity</u>                      - <u>Cell synchronisation information</u></p> <p>- <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p> <p>- <u>CPICH Ec/N0</u>                      - <u>CPICH RSCP</u>                      - <u>Pathloss</u></p>	<p>Cell 1. See Note 2                      Checked that this IE is absent                      Checked that this IE is present and includes IE COUNT-C-SFN frame difference</p> <p>Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108                      Checked that this IE is absent                      Checked that this IE is present                      Checked that this IE is absent</p>
<p><u>Measured results on RACH</u>  <u>Additional measured results</u>  <u>Event results</u>                      - <u>Intra-frequency measurement event results</u>                      - <u>Intra-frequency event identity</u>                      - <u>Cell measurement event results</u>                      - <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p>	<p>Checked that this IE is absent                      Checked that this IE is absent</p> <p>1b</p> <p>Cell 1.                      Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108</p>

NOTE 1: Cell measured results for cells 2, 3 and 7 may appear in any order.

NOTE 2: Cell measured results for cell 1 may or may not be present (depends upon the capability of the UE and test uncertainties in power level).

## MEASUREMENT REPORT (Step 28)

Information Element	Value/remark
<u>Message Type</u> <u>Integrity check info</u> - Message authentication code  - RRC Message sequence number  <u>Measurement identity</u> <u>Measured Results</u> - Intra-frequency measured results	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. 1
- Cell measured results - Cell Identity - Cell synchronisation information - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 3. See Note 1. Checked that this IE is absent Checked that this IE is absent  Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
- Cell measured results - Cell Identity - Cell synchronisation information - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 7. See Note 1 Checked that this IE is absent Checked that this IE is absent  Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
- Cell measured results - Cell Identity - Cell synchronisation information  - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 1. See Note 2 Checked that this IE is absent Checked that this IE is present and includes IE COUNT-C-SFN frame difference  Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
- Cell measured results - Cell Identity - Cell synchronisation information  - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 2. See Note 2 Checked that this IE is absent Checked that this IE is present and includes IE COUNT-C-SFN frame difference  Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
<u>Measured results on RACH</u> <u>Additional measured results</u> <u>Event results</u> - Intra-frequency measurement event results - Intra-frequency event identity - Cell measurement event results - Primary CPICH info - Primary scrambling code	Checked that this IE is absent Checked that this IE is absent  1b  Cell 2. Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 3 and 7 may appear in any order.

NOTE 2: Cell measured results for cell 1 and cell 2 may or may not be present (depends upon the capability of the UE and test uncertainties in power level). If present they may appear in any order.

## MEASUREMENT REPORT (Step 33)

Information Element	Value/remark
<u>Message Type</u> <u>Integrity check info</u> - Message authentication code  - RRC Message sequence number  <u>Measurement identity</u> <u>Measured Results</u> - Intra-frequency measured results	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. 1
- Cell measured results - Cell Identity - Cell synchronisation information - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 7. Checked that this IE is absent Checked that this IE is absent  Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
- Cell measured results - Cell Identity - Cell synchronisation information - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 1. See Note 1 Checked that this IE is absent Checked that this IE is absent  Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
- Cell measured results - Cell Identity - Cell synchronisation information  - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 2. See Note 1 Checked that this IE is absent Checked that this IE is present and includes IE COUNT-C-SFN frame difference  Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
- Cell measured results - Cell Identity - Cell synchronisation information  - Primary CPICH info - Primary scrambling code  - CPICH Ec/N0 - CPICH RSCP - Pathloss	Cell 3. See Note 1 Checked that this IE is absent Checked that this IE is present and includes IE COUNT-C-SFN frame difference  Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent
<u>Measured results on RACH</u> <u>Additional measured results</u> <u>Event results</u> - Intra-frequency measurement event results - Intra-frequency event identity - Cell measurement event results - Primary CPICH info - Primary scrambling code	Checked that this IE is absent Checked that this IE is absent  1b  Cell 3. Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108

NOTE 1: Cell measured results for cells 1, 2 and 3 may or may not be present (depends upon the capability of the UE and test uncertainties in power level). If present they may appear in any order.

MEASUREMENT REPORT (Step 38)

Information Element	Value/remark
<p><u>Message Type</u>  <u>Integrity check info</u>                      - <u>Message authentication code</u></p> <p>- <u>RRC Message sequence number</u></p> <p><u>Measurement identity</u>  <u>Measured Results</u>                      - <u>Intra-frequency measured results</u></p>	<p>This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.</p> <p>This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.</p> <p>1</p>
<p>- <u>Cell measured results</u>                      - <u>Cell Identity</u>                      - <u>Cell synchronisation information</u>                      - <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p> <p>- <u>CPICH Ec/N0</u>                      - <u>CPICH RSCP</u>                      - <u>Pathloss</u></p>	<p>Cell 1.                      Checked that this IE is absent                      Checked that this IE is absent</p> <p>Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108                      Checked that this IE is absent                      Checked that this IE is present                      Checked that this IE is absent</p>
<p>- <u>Cell measured results</u>                      - <u>Cell Identity</u>                      - <u>Cell synchronisation information</u>                      - <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p> <p>- <u>CPICH Ec/N0</u>                      - <u>CPICH RSCP</u>                      - <u>Pathloss</u></p>	<p>Cell 2. See Note 1                      Checked that this IE is absent                      Checked that this IE is absent</p> <p>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108                      Checked that this IE is absent                      Checked that this IE is present                      Checked that this IE is absent</p>
<p>- <u>Cell measured results</u>                      - <u>Cell Identity</u>                      - <u>Cell synchronisation information</u></p> <p>- <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p> <p>- <u>CPICH Ec/N0</u>                      - <u>CPICH RSCP</u>                      - <u>Pathloss</u></p>	<p>Cell 3. See Note 1                      Checked that this IE is absent                      Checked that this IE is present and includes IE COUNT-C-SFN frame difference</p> <p>Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108                      Checked that this IE is absent                      Checked that this IE is present                      Checked that this IE is absent</p>
<p>- <u>Cell measured results</u>                      - <u>Cell Identity</u>                      - <u>Cell synchronisation information</u></p> <p>- <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p> <p>- <u>CPICH Ec/N0</u>                      - <u>CPICH RSCP</u>                      - <u>Pathloss</u></p>	<p>Cell 7. See Note 1                      Checked that this IE is absent                      Checked that this IE is present and includes IE COUNT-C-SFN frame difference</p> <p>Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108                      Checked that this IE is absent                      Checked that this IE is present                      Checked that this IE is absent</p>
<p><u>Measured results on RACH</u>  <u>Additional measured results</u>  <u>Event results</u>                      - <u>Intra-frequency measurement event results</u>                      - <u>Intra-frequency event identity</u>                      - <u>Cell measurement event results</u>                      - <u>Primary CPICH info</u>                      - <u>Primary scrambling code</u></p>	<p>Checked that this IE is absent                      Checked that this IE is absent</p> <p>1b</p> <p>Cell 7.                      Refer to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1 of TS 34.108</p>

NOTE 1: Cell measured results for cells 2, 3 and 7 may or may not be present (depends upon the capability of the UE and test uncertainties in power level). If present they may appear in any order.

#### 8.3.4.8.5 Test requirement

After step 1 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 3 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set additional procedure.

After step 5 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 8 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 10 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set additional procedure.

After step 12 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 15 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 17 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set additional procedure.

After step 19 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 22 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 24 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 27 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 29 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 32 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 34 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 37 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 39 the UE shall transmit a UE CAPABILITY INFORMATION message.

CR-Form-v7

## CHANGE REQUEST

№ **34.123-1 CR 591** № rev **2** № Current version: **5.5.0** №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	№ Clarifications in low priority test case 11.1.2 PDP context activation requested by the network, successful and unsuccessful		
<b>Source:</b>	№ NEC		
<b>Work item code:</b>	№ TEI	<b>Date:</b>	№ 22/10/2003
<b>Category:</b>	№ <b>F</b>	<b>Release:</b>	№ Rel-5
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	№ Test prose needs clarification.
<b>Summary of change:</b>	№ <ol style="list-style-type: none"> <li>1. Test purpose described more precisely</li> <li>2. Added clarification in Method of test</li> <li>3. Added more comments in Expected sequence</li> <li>4. Added information in Specific message contents</li> </ol>
<b>Consequences if not approved:</b>	№ Unclear test description can cause incorrect test implementation.

<b>Clauses affected:</b>	№ 11.1.2.3, 11.1.2.4										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	№	
Y	N										
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<input type="checkbox"/>	<input type="checkbox"/>										
<b>Other comments:</b>	№ Affects to R99, Rel-4 and Rel-5										

**How to create CRs using this form:**

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- 1) Fill out the above form. The symbols above marked № contain pop-up help information about the field that they are closest to.

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

**<Start of modified section>**

## 11.1.2 PDP context activation requested by the network, successful and unsuccessful

### 11.1.2.1 Definition

This test needs to take into account the number of active PDP contexts supported simultaneously by the UE, to be able to test the response when all contexts are activated and the network tries to initiate a new context.

### 11.1.2.2 Conformance requirement

#### 1) Successful PDP context activation requested by the network

In order to request a PDP context activation, the network sends a REQUEST PDP CONTEXT ACTIVATION message to the UE and starts timer T3385. The message contains an offered PDP address. If available, the APN shall be included in the REQUEST PDP CONTEXT ACTIVATION message.

Upon receipt of a REQUEST PDP CONTEXT ACTIVATION message, the UE shall then either initiate the PDP context activation procedure as described in 3GPP TS 24.008 clause 6.1.3.1.1, or shall reject the activation request by sending a REQUEST PDP CONTEXT ACTIVATION REJECT message as described in 3GPP TS 24.008 clause 6.1.3.1.4. The value of the reject cause IE of the REQUEST PDP CONTEXT ACTIVATION REJECT message shall indicate the reason for rejection, e.g. "insufficient resources to activate another context".

The ACTIVATE PDP CONTEXT REQUEST message sent by the UE in order to initiate the PDP context activation procedure shall contain the PDP address, PDP Type and APN requested by the network in the REQUEST PDP CONTEXT ACTIVATION message.

Upon receipt of the ACTIVATE PDP CONTEXT REQUEST message, the network shall stop timer T3385.

The same procedures then apply as described for UE initiated PDP context activation (3GPP TS 24.008, clause 6.1.3.1.1).

#### 2) Unsuccessful PDP context activation requested by the network

Upon receipt of the REQUEST PDP CONTEXT ACTIVATION message, the UE may reject the network requested PDP context activation by sending the REQUEST PDP CONTEXT ACTIVATION REJECT message to the network. The message contains the same TI as included in the REQUEST PDP CONTEXT ACTIVATION and an additional cause code that typically indicates one of the following causes:

#26: insufficient resources;

#31: activation rejected, unspecified;

#40: feature not supported; or

#95 – 111: protocol errors.

The network shall stop timer T3385 and enter state PDP-INACTIVE.

#### 3) Whenever a REQUEST PDP CONTEXT ACTIVATION message is received by the UE specifying a transaction identifier relating to a PDP context not in state PDP-INACTIVE, the UE shall locally deactivate the old PDP context relating to the received transaction identifier. Furthermore, the UE shall continue with the activation procedure of a new PDP context as indicated in the received message.

### Reference

3GPP TS 24.008 clauses 6.1.3.1.2, 6.1.3.1.4 and 8.3.2.f).



### 11.1.2.3 Test purpose

To test ~~the~~ behaviour of the UE upon receipt of a PDP context activation request from the SS:

- a) When UE supports PDP context activation requested by the network
- b) When UE supporting PDP context activation requested by the network, receives REQUEST PDP CONTEXT ACTIVATION message with transaction identifier relating to an already active PDP context
- c) When UE does not support PDP context activation requested by the network

### 11.1.2.4 Method of test

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

Related ICS/IXIT statements

- PS Supported yes/no
- Network requested PDP context activation supported yes/no
- Number of network initiated PDP contexts supported

#### Case 1

For a UE that supports PDP context activation requested by the network.

Test procedure

A REQUEST PDP CONTEXT ACTIVATION message is sent by the SS. On receipt of the ACTIVATE PDP CONTEXT REQUEST message from the UE, an ACTIVATE PDP CONTEXT ACCEPT message is returned by the SS. This is repeated until the maximum number of contexts supported by the UE is activated.

If the UE cannot support seven PDP contexts then one greater than the maximum supported by the UE should be requested.

In response to ~~this~~ the last activation request the UE shall return a REQUEST PDP CONTEXT ACTIVATION REJECT message with cause set to 'insufficient resources', 'activation rejected, unspecified' or 'protocol errors' using cause values #26, #31, #40 or #95-111.

REQUEST PDP CONTEXT ACTIVATION message is then sent by the SS using transaction identifier of the currently ~~activated~~ active PDP context. ~~transaction identifier~~. The UE shall activate this context in place of the previous context.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	REQUEST PDP CONTEXT ACTIVATION	SS sends Request a PDP context activation to UE <u>and starts timer T3385</u>
2		→	ACTIVATE PDP CONTEXT REQUEST	UE replies with a <del>Request</del> PDP context activation <u>request, Traffic class set to Streaming class or Interactive class or Background class</u>
2a		SS		The SS <u>stops timer T3385 and</u> establishes the Radio Access Bearer.
3		←	ACTIVATE PDP CONTEXT ACCEPT	SS accepts the PDP context activation
4		SS		Steps 1-3 are repeated for the number of Network Initiated contexts supported. <u>using various values for Traffic class IE.</u> NOTE: If all 7 contexts are supported steps 5 and 6 should not be performed.
5		←	REQUEST PDP CONTEXT ACTIVATION	SS requests a PDP context activation <u>and starts timer T3385</u>
6		→	REQUEST PDP CONTEXT ACTIVATION REJECT	The context activation request is rejected with cause 'insufficient resources', <u>or</u> 'activation rejected, unspecified' or 'protocol errors' using cause values #26, #31, #40 or #95-111.
6a		SS		<u>The SS stops timer T3385</u>
7		←	REQUEST PDP CONTEXT ACTIVATION	SS requests a PDP context activation for an existing context with TI the same as one of the active PDP contexts <u>and starts timer T3385</u>
8		UE		UE locally deactivates the old PDP context with the same TI value
9		→	ACTIVATE PDP CONTEXT REQUEST	UE continues with the activation of a new PDP context to replace <u>locally</u> deactivated context
9a		SS		<u>The SS stops timer T3385 and releases the Radio Access Bearer for old PDP context.</u>
9b		SS		The SS <u>stops timer T3385 and</u> establishes the Radio Access Bearer <u>for new PDP context.</u>
10		←	ACTIVATE PDP CONTEXT ACCEPT	SS accepts the PDP context activation

## Case 2

For an UE that does not support PDP context activation requested by the network.

Test procedure

A REQUEST PDP CONTEXT ACTIVATION message is sent by the SS. The UE shall then send a REQUEST PDP CONTEXT ACTIVATION REJECT message.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	REQUEST PDP CONTEXT ACTIVATION	<a href="#">SS</a> requests a PDP context activation and starts timer T3385
2		→	REQUEST PDP CONTEXT ACTIVATION REJECT	Reject the PDP context activation request with cause 'insufficient resources' or 'feature not supported', 'activation rejected, unspecified' or 'protocol errors' using cause values #26, #31, #40 or #95-111.
<a href="#">3</a>		<a href="#">SS</a>		<a href="#">The SS stops timer T3385</a>

Specific message contents

~~In~~ Case 1

[Step 6: REQUEST PDP CONTEXT ACTIVATION REJECT message contains the same TI as included in the REQUEST PDP CONTEXT ACTIVATION message in step 5.](#)

~~s~~Step 7: TI IE value is equal to the TI value of one of the active PDP contexts, Offered PDP address IE value and/or Access point name IE value are (is) different from the corresponding IE value(s) in the existing PDP context.

[Case 2](#)

[Step 2. REQUEST PDP CONTEXT ACTIVATION REJECT message contains the same TI as included in the REQUEST PDP CONTEXT ACTIVATION message in step 1.](#)

#### 11.1.2.5 Test requirements

The UE that is configured to support one or more PDP contexts simultaneously shall:

- accept PDP context activation initiated by the SS if number of active contexts is lower than the maximum.
- locally deactivate the old PDP context when a REQUEST PDP CONTEXT ACTIVATION message is received, specifying a transaction identifier relating to an active PDP context and continue with the activation procedure of a new PDP context as indicated in the received message.

The UE that does not support PDP Context Activation (a number of active contexts supported by the UE is equal to maximum or UE does not support PDP context) shall reject PDP context activation initiated by the SS.

<End of modified section>

## CHANGE REQUEST

⌘ **34.123-1 CR 600** ⌘ rev **3** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ CR 34.123-1 Rel-5: 12.4.2.5a Combined routing area updating / rejected / roaming not allowed in this location area		
<b>Source:</b>	⌘ Nokia		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 06/11/2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (correction)</p> <p><b>A</b> (corresponds to a correction in an earlier release)</p> <p><b>B</b> (addition of feature),</p> <p><b>C</b> (functional modification of feature)</p> <p><b>D</b> (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a>.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>

<b>Reason for change:</b>	<p>⌘ Test Procedure1</p> <p>Security procedure added on step 9a.</p> <p>Mobile identity for P-TMSI shall be added in Routing Area Update Request in UMTS system. 3GPP 24.008 chapter 9.4.14.5</p> <p>Test Procedure2</p> <p>Cause value #13 roaming not allowed in this location does not clear P-TMSI. Attach in step 20 shall be established with valid P-TMSI. Cell B was Suitbale neighbour cell in step 7. The cell is selected after step 10a without change.</p> <p>Combined Attach Request or Routing Area Update shall not carry TMSI status field if TMSI is available 3GPP TS 24.008 9.4.1.3 and 9.4.14.4</p> <p>Mobile identity for P-TMSI shall be added in Routing Area Update Request in UMTS system. 3GPP 24.008 chapter 9.4.14.5</p> <p>Step 18 a is not needed. 34.108 covers manual attach case.</p> <p>Revised after comments from Sasken.</p> <p>Revised after comments from Sony Ericsson Mobile Communications Japan, Inc.</p> <p>Revised into document T1-031681 – due to comments from Motorola to remove the word ‘Optional’ from Step 9a in both test cases.</p>
<b>Summary of change:</b>	⌘ Attach prosedure is sent with P-TMSI after routing area update reject cause #13

**Consequences if not approved:** ⌘ Test case is against 3GPP TS 24.008

**Clauses affected:** ⌘ 12.4.5a

	Y	N		⌘
<b>Other specs Affected:</b>		X	Other core specifications	
		X	Test specifications	
		X	O&M Specifications	

**Other comments:** ⌘

**How to create CRs using this form:**

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- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

35	SS	The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Serving cell" and "Suitable neighbour cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

### Specific message contents

None.

#### 12.4.2.4.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- -initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step 10, the UE shall delete the equivalent PLMN list (MCC=1, MNC=3).

At step 12, the UE shall not initiate a PS attach procedure to cell E.

At step 18 and 24, UE shall:

- not initiate a PS attach procedure.

At step14, 20 and 26, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step20, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step30, UE shall:

- perform the PS attach procedure.

<START OF MODIFIED SECTION>

#### 12.4.2.5a Combined routing area updating / rejected / roaming not allowed in this location area

##### 12.4.2.5a.1 Definition

##### 12.4.2.5a.2 Conformance requirement

- 1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment:
  - 1.1 shall not perform combined PS attach when in the same location area.
  - 1.2 shall store the LA in the 'forbidden location areas for roaming'.
  - 1.3 shall perform a routing area update when entering in a new location area if the LAI or the PLMN identity is not contained in any of the lists "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" or "forbidden PLMNs" and the current update status is different from "IDLE NO IMSI".

- 2) The User Equipment shall reset the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.

#### Reference

3GPP TS 24.008 clause 4.7.5.2.

3GPP TS 23.122 clause 4.5.2.

#### 12.4.2.5a.3 Test purpose

##### Test purpose1

To test that on receipt of a rejection using the 'Roaming not allowed in this area' cause code, the UE ceases trying a routing area updating procedure on that location area. Successful combined routing area updating procedure is possible in other location areas.

##### Test purpose2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

#### 12.4.2.5a.4 Method of test

##### 12.4.2.5a.4.1 Test procedure1

#### Initial condition

##### System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN).

Both cells are operating in network operation mode I.

##### User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS rejects a combined routing area updating with the cause value 'Roaming not allowed in this area'. A new attempt for a combined PS attach is not possible. Successful combined routing area updating procedure is performed in another location area. The UE is moved back to the 1<sup>st</sup> location area. A combined routing area updating shall not be performed, as the LA is on the forbidden list.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = TMSI-1
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-2 <u>Mobile identity = P-TMSI-2</u>
9a		SS		<u>SS starts integrity protection</u>
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this area'
10a		SS		The SS releases the RRC connection.
11			Void	
12			Void	
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
18	UE			Cell A is preferred by the UE.
18a			Void	
19			Void	



Step	Direction		Message	Comments
	UE	SS		
19a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-2 <a href="#">Mobile identity = P-TMSI-2</a>
20a		SS		The SS starts integrity protection.
21	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2 Mobile identity = TMSI-1
22	->		ROUTING AREA UPDATE COMPLETE	
22a		SS		The SS releases the RRC connection.
23	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
24		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
25			Void	
26			Void	
27	->		PAGING RESPONSE	Mobile identity = TMSI-1
27a		SS		The SS starts integrity protection.
28		SS		The SS releases the RRC connection
29			Void	
30	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating background call"
30a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating background call".
30b			Void	
30c			Void	
31	->		SERVICE REQUEST	service type = "paging response"
31o		SS		The SS starts integrity protection.
31a		SS		The SS releases the RRC connection.
31b			Void	
32		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
33		UE		No ROUTING AREA UPDATE REQUEST sent to SS (SS waits 30 seconds).
34	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
35		UE		No response from the UE to the request. This is checked for 10 seconds.
NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

## 12.4.2.5a.4.2 Test procedure2

## Initial condition

## System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN).

Both cells are operating in network operation mode I.

## User Equipment:

The UE has a valid IMSI. UE is Idle Updated on cell A.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The SS rejects a combined routing area updating with the cause value 'Roaming not allowed in this area'. The UE is switched off for 10 seconds and switched on again. The SS checks that a combined PS attach is possible on the cell on which the previous combined routing area updating had been rejected.

If USIM removal is possible without switching off:

The SS rejects a routing area updating with the cause value 'Roaming not allowed in this area'. The USIM is removed and inserted in the UE. The SS checks that a PS attach procedure and routing area updating procedure is possible on the cell on which the routing area updating had previously been rejected.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = TMSI-1
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " <del>Non-</del> Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-2 <a href="#">Mobile identity = P-TMSI-2</a>
9a		SS		<a href="#">The SS starts integrity protection</a>
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this area'
10a		SS		The SS releases the RRC connection.
11			Void	
12			Void	
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for-PS service.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS service.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
17a		SS		<a href="#">Set the cell type of cell A to the "Suitable neighbour cell".</a> <a href="#">Set the cell type of cell B to the "Serving cell".</a> (see note)
18	UE			The UE gets the USIM replaced, is powered up or switched on.

Step	Direction		Message	Comments
	UE	SS		
18a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE.
19	UE			The UE initiates an attach <del>automatically</del> (see ICS) by MMI or AT command.
19a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = <del>P-TMSI</del> <u>2IMSI</u> <del>TMSI status = Attach Request shall not carry TMSI status.</del> <u>no valid TMSI available</u>
20a	<-		AUTHENTICATION AND CIPHERING REQUEST	
20b	->		AUTHENTICATION AND CIPHERING RESPONSE	
20c	SS			The SS starts integrity protection.
21	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6 Mobile identity = TMSI-1
22	->		ATTACH COMPLETE	
22a	SS			The SS releases the RRC connection.
23	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
24	SS		<del>Void</del>	The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
25			Void	
26			Void	
27	->		PAGING RESPONSE	Mobile identity = TMSI-1
27a	SS			The SS starts integrity protection.
28	SS			The SS releases the RRC connection.
29			Void	
30	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging cause = "Terminating background call"
30a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating background call".
30b			Void	
30c			Void	
31	->		SERVICE REQUEST	service type = "paging response"
31o	SS			The SS starts integrity protection.
31a	SS			The SS releases the RRC connection.
31b			Void	
32	UE			The UE is switched off or power is removed (see ICS).
33	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

#### 12.4.2.5a.5 Test requirements

##### Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence

At step12, when the SS rejects the combined routing area update procedure with GMM cause = 'Roaming not allowed in this area', UE shall:

- not initiate a PS attach procedure.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step20, UE shall:

- initiate the combined RA/LA updating procedure.

At step27, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step31, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step35, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

##### Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step20, UE shall:

- initiate the combined PS attach procedure.

At step27, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step31, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

<END OF MODIFIED SECTION>

CR-Form-v7

## CHANGE REQUEST

# 34.123-1 CR 595 # rev 2 # Current version: 5.5.0 #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	# CR to TS 34.123-1 [REL-5] Package 1 SM test case 11.1.1.1 Attach initiated by context activation/QoS Offered by Network is the QoS Requested (Merge of T1-031366 and T1-031486) (Revision of T1-031573)		
<b>Source:</b>	# Anite Telecoms, NEC		
<b>Work item code:</b>	# TEI	<b>Date:</b>	# 06/11/03
<b>Category:</b>	# F	<b>Release:</b>	# REL-5

<b>Reason for change:</b>	# This merges CRs T1-031486 from NEC and T1-031366 from Anite.  <ol style="list-style-type: none"> <li>1) The expected sequence starts with a DETACH REQUEST which is not possible if the UE is in initial state "GMM-DEREGISTERED".</li> <li>2) Force to standby IE value incorrect</li> </ol>
<b>Summary of change:</b>	# <ol style="list-style-type: none"> <li>1) The initial state of the UE is modified to be explicitly "GMM-REGISTERED". The previously optional DETACH at the start of the test procedure is made non-optional.</li> <li>2) In step 5 of the Expected sequence, comment "Force to standby information element set" replaced with "Force to standby IE set to "Force to standby not indicated""</li> </ol>
<b>Consequences if not approved:</b>	# The UE will not behave in the expected manner with this initial state.

<b>Clauses affected:</b>	# 11.1.1.1										
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	# 34.123-2 and 34.123-334.123-2 and 34.123-3
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<b>Other comments:</b>	# Affects R99, Rel-4 and Rel-5 test cases.										

**How to create CRs using this form:**

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- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request



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## 11 Session Management Procedures

### 11.1 PDP context activation

#### 11.1.1 Initiated by the UE

##### 11.1.1.1 Attach initiated by context activation/QoS Offered by Network is the QoS Requested

###### 11.1.1.1.1 Definition

###### 11.1.1.1.2 Conformance requirement

SM procedures for identified access can only be performed if a GMM context has been established between the UE and the network. If no GMM context has been established, the MM sublayer has to initiate the establishment of a GMM context by use of the GMM procedures as described in chapter 4, 3GPP TS 24.008. After GMM context establishment, SM uses services offered by GMM (see 3GPP TS 24.007). Ongoing SM procedures are suspended during GMM procedure execution.

In UMTS only, integrity protected signalling (see 3GPP TS 24.008 clause 4.1.1.1.1) and in general, see 3GPP TS 33.102) is mandatory. In UMTS only, all protocols shall use integrity protected signalling. Integrity protection of all SM signalling messages is the responsibility of lower layers. It is the network which activates integrity protection. This is done using the security mode control procedure (TS 25.331).

In order to request a PDP context activation, the UE sends an ACTIVATE PDP CONTEXT REQUEST message to the network, enters the state PDP-ACTIVE-PENDING and starts timer T3380. The message contains the selected NSAPI, PDP type, requested QoS and, if the UE requests a static address, the PDP address.

Upon receipt of an ACTIVATE PDP CONTEXT REQUEST message, the network selects a radio priority level based on the QoS negotiated and may reply with an ACTIVATE PDP CONTEXT ACCEPT message. Upon receipt of the message ACTIVATE PDP CONTEXT ACCEPT the UE shall stop timer T3380, shall enter the state PDP-ACTIVE.

If the QoS offered by the network is the same as the QoS requested by the UE, the UE shall accept the negotiated QoS.

In UMTS, both the network and the UE shall store the LLC SAPI and the radio priority in the PDP context. If a UMTS to GSM system change is performed, the new SGSN shall initiate establishment of the logical link using the negotiated QoS profile, the negotiated LLC SAPI, and selected radio priority level stored in the PDP context as in a GSM to GSM Routing Area Update.

A UE, which is capable of operating in both GSM and UMTS, shall use a valid LLC SAPI, while a UE which is capable of operating only in UMTS shall indicate the LLC SAPI value as "LLC SAPI not assigned" in order to avoid unnecessary value range checking and any other possible confusion in the network.

NOTE 1: The radio priority level and the LLC SAPI parameters, though not used in UMTS, shall be included in the messages, in order to support handover between UMTS and GSM networks.

#### Reference

3GPP TS 24.008 clauses 6.1.1 and 6.1.3.1.1.

###### 11.1.1.1.3 Test purpose

To check that the UE initiates a PS attach, if one is not already active, when PDP context activation is requested.

To test the behaviour of the UE when SS responds to the PDP context activation request with the requested QoS.



Expected sequence

Step	Direction		Message	Comments
	UE	SS		
<a href="#">0a</a>	<a href="#">UE</a>			<a href="#">Detach is performed by the UE using MMI or AT Commands</a>
0		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
1	→		DETACH REQUEST	<del>Only sent if the UE attaches at power-up, if not go to step 3.</del> <del>Detach is performed by the UE using MMI or AT Commands</del>
1a		SS		The SS starts integrity protection.
2	←		DETACH ACCEPT	SS sends Detach Accept message.
2a		SS		The SS releases the RRC connection.
3		UE		Initiate a context activation
3a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	→		ATTACH REQUEST	Request attach with Follow-on request pending
4a		SS		The SS starts ciphering and integrity protection.
5	←		ATTACH ACCEPT	Accept attach Negotiated Ready timer value IE should not be included <a href="#">Force to standby IE set to "Force to standby not indicated"</a> <del>Force to standby indicator set</del>
6	→		ACTIVATE PDP CONTEXT REQUEST	Request a PDP context activation (with static PDP address)
6a		SS		The SS establishes the RAB.
7	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context activation
8		SS		Wait for T3380 seconds to ensure no further activate request messages come from the UE
9	←		MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	SS sends a modify request to UE for the activated context
10	→		MODIFY PDP CONTEXT ACCEPT (UE TO NETWORK DIRECTION)	UE accepts the modification request from the SS to show context is activated
11		SS		SS releases the RRC connection due to inactivity (no user data transferred)

Specific message contents

None.

#### 11.1.1.1.5 Test requirements

At step 0 the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step 3a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

When requesting a PDP context activation, the UE shall:

- initiate a PS ATTACH if one is not already active;
- when the SS responds to a PDP context activation request, initiated by the UE, with the requested QoS, the UE shall complete the PDP context activation procedure. To check if the PDP context activation was successful, SS shall request PDP context modification and UE shall accept it.

CR-Form-v7

## CHANGE REQUEST

# 34.123-1 CR 648 # rev - # Current version: 5.5.0 #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

**Proposed change affects:** UICC apps#  ME  Radio Access Network  Core Network

<b>Title:</b>	# General Modification to clause 9 - MM test cases – to be run only in NMOII		
<b>Source:</b>	# Anite Telecoms		
<b>Work item code:</b>	# TEI	<b>Date:</b>	# 06/11/03
<b>Category:</b>	# F	<b>Release:</b>	# REL-5

<b>Reason for change:</b>	# To clarify that in general MM test cases in clause 9 should be run in NMO II in order to avoid unnecessary complication involving PS domain procedures which are by definition not part of the test purpose.
<b>Summary of change:</b>	# Add statement in clause 9 stating that MM tests should be run in NMO II unless specifically indicated otherwise in individual sub-clauses.
<b>Consequences if not approved:</b>	# The UE may not behave in the expected manner if the tests are run in NMO I.

<b>Clauses affected:</b>	# 9								
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; vertical-align: middle;"> <thead> <tr> <th style="width: 20px;">Y</th> <th style="width: 20px;">N</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">#</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">#</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">#</td> </tr> </tbody> </table> Other core specifications # Test specifications # O&M Specifications #	Y	N	#	#	#	#	#	#
Y	N								
#	#								
#	#								
#	#								
<b>Other comments:</b>	# Affects R99, Rel-4 and Rel-5 test cases.								

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request

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## 9 Elementary procedures of mobility management

The tests are based on TS 24.008.

In this clause, when the expected sequence require that "a mobile originated CM connection is attempted", it shall be for a service other than emergency call.

In this clause, a initial CM message is either a SETUP message, a REGISTER message or a CP-DATA message (in that case the acknowledged mode of operation on SAPI 3 will have be established and this message will be sent on SAPI 3).

[All tests in this clause shall only be performed in Network Mode of Operation II, unless specifically specified otherwise in individual sub-clauses.](#)

### 9.1 TMSI reallocation

## CHANGE REQUEST

# 34.123-1 CR 645 # rev 2 # Current version: 5.5.0 #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	# Correction to package 3 test case 14.2.51b		
<b>Source:</b>	# Ericsson		
<b>Work item code:</b>	# TEI	<b>Date:</b>	# 3/11/2003
<b>Category:</b>	# <b>F</b>	<b>Release:</b>	# REL-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	# The difference in TTI for the PS RAB UL:16/DL:64 kbps, UL TTI=40 ms and DL TTI=20 ms, is not considered in test case for radio bearer combination 6.10.2.4.1.51b (Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:16 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH).
<b>Summary of change:</b>	# <ol style="list-style-type: none"> <li>1. Test case 14.2.51b.1                      (Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 20 ms TTI + Interactive or background / UL:16 DL:64 kbps / PS RAB)                     <ol style="list-style-type: none"> <li>a. Metod of test: Clarification regarding the difference in TTI between downlink and uplink for the PS RAB UL:16 (40 ms TTI) / DL:64 kbps (20 ms TTI) added. For the case when the uplink TF only has one transport block SS transmitted SDUs in downlink will be temporary buffered in the uplink transmission buffer. The default value for transmission window size (128) is assumed to enough for the actual test sequence.</li> <li>b. Sub-tests updated to reflect the differences in TTI between uplink and downlink for RB6</li> <li>c. Notes added to clarify the reason behind UL RLS SDU size for the different sub-tests.</li> </ol> </li> <li>2. Test case 14.2.51b.2                      (Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 40 ms TTI + Interactive or background / UL:16 DL:64 kbps / PS RAB)</li> </ol>

Same changes as for test case 14.2.51b.1.													
<b>Consequences if not approved:</b>	⌘ Inconsisting test specification. Good UE may fail.												
<b>Clauses affected:</b>	⌘ 14.2.51b.1 and 14.2.51b.2												
<b>Other specs affected:</b>	<table border="1"> <thead> <tr> <th>Y</th> <th>N</th> <th></th> </tr> </thead> <tbody> <tr> <td></td> <td>X</td> <td>Other core specifications</td> </tr> <tr> <td></td> <td>X</td> <td>Test specifications</td> </tr> <tr> <td></td> <td>X</td> <td>O&amp;M Specifications</td> </tr> </tbody> </table>	Y	N			X	Other core specifications		X	Test specifications		X	O&M Specifications
Y	N												
	X	Other core specifications											
	X	Test specifications											
	X	O&M Specifications											
<b>Other comments:</b>	⌘ Affects REL-5, REL-4 and R99.												

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

14.2.51b Conversational / unknown / UL:64 DL:64 kbps / CS RAB +  
Interactive or Background / UL:16 DL:64 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH.

14.2.51b.1 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 20 ms TTI +  
Interactive or background / UL:16 DL:64 kbps / PS RAB

14.2.51b.1.1 Conformance requirement

See 14.2.4.1.

14.2.51b.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.51b for the 20 ms TTI case.

14.2.51b.1.3 Method of test

See 14.1.2 for test procedure.

For the PS UL:16/DL:64 kbps radio bearer the downlink TTI is 20ms while the uplink TTI is 40ms. As the SS will send one DL SDU every 20 ms then the UE test loop function will return 2 UL SDUs per uplink TTI. To not cause uplink transmission buffer overflow then the UL RLC SDU size should be chosen such that the UE will transmit 2 RLC SDUs per uplink TTI. For the case when the transport format under test does not allow for 2 SDUs to fit into the transport format size without requiring concatenation then the UL RLC SDU size shall be chosen such that one SDU is returned per uplink TTI.

Uplink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 16 kbps, 40 ms TTI)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF0, TF1, TF0)
UL_TFC2	(TF0, TF2, TF0)
UL_TFC3	(TF1, TF0, TF0)
UL_TFC4	(TF1, TF1, TF0)
UL_TFC5	(TF1, TF2, TF0)
UL_TFC6	(TF0, TF0, TF1)
UL_TFC7	(TF0, TF1, TF1)
UL_TFC8	(TF0, TF2, TF1)
UL_TFC9	(TF1, TF0, TF1)
UL_TFC10	(TF1, TF1, TF1)
UL_TFC11	(TF1, TF2, TF1)

Downlink TFS:



	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A
	TF3, bits	N/A	3x336	N/A
	TF4, bits	N/A	4x336	N/A

Downlink TFCS:

TFCI	(RB5, RB6, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF0, TF1, TF0)
DL_TFC2	(TF0, TF2, TF0)
DL_TFC3	(TF0, TF3, TF0)
DL_TFC4	(TF0, TF4, TF0)
DL_TFC5	(TF1, TF0, TF0)
DL_TFC6	(TF1, TF1, TF0)
DL_TFC7	(TF1, TF2, TF0)
DL_TFC8	(TF1, TF3, TF0)
DL_TFC9	(TF1, TF4, TF0)
DL_TFC10	(TF0, TF0, TF1)
DL_TFC11	(TF0, TF1, TF1)
DL_TFC12	(TF0, TF2, TF1)
DL_TFC13	(TF0, TF3, TF1)
DL_TFC14	(TF0, TF4, TF1)
DL_TFC15	(TF1, TF0, TF1)
DL_TFC16	(TF1, TF1, TF1)
DL_TFC17	(TF1, TF2, TF1)
DL_TFC18	(TF1, TF3, TF1)
DL_TFC19	(TF1, TF4, TF1)

Sub-tests:

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1, DL_TFC11	UL_TFC1, UL_TFC7	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC6, UL_TFC7	RB5: 1280 RB6: 312 <a href="#">(note 3)</a>	RB5: No data RB6: 312
2	DL_TFC2, DL_TFC12	UL_TFC2 ,UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8	RB5: 1280 RB6: <del>312</del> <a href="#">(note 4)</a>	RB5: No data RB6: 632
3	DL_TFC3, DL_TFC13	UL_TFC2, UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8	RB5: 1280 RB6: <del>312</del> <a href="#">(note 4)</a>	RB5: No data RB6: 952
4	DL_TFC4, DL_TFC14	UL_TFC2 ,UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8	RB5: 1280 RB6: <del>312</del> <a href="#">(note 4)</a>	RB5: No data RB6: 1272
5	DL_TFC5, DL_TFC15	UL_TFC3 ,UL_TFC9	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 1280 RB6: 312	RB5: 1280 RB6: No data
6	DL_TFC6, DL_TFC16	UL_TFC4, UL_TFC10	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10	RB5: 1280 RB6: 312 <a href="#">(note 3)</a>	RB5: 1280 RB6: 312
7	DL_TFC7, DL_TFC17	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 1280 RB6: <del>312</del> <a href="#">(note 4)</a>	RB5: 1280 RB6: 632
8	DL_TFC8, DL_TFC18	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 1280 RB6: <del>312</del> <a href="#">(note 4)</a>	RB5: 1280 RB6: 952
9	DL_TFC9, DL_TFC19	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 1280 RB6: <del>312</del> <a href="#">(note 4)</a>	RB5: 1280 RB6: 1272

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC3 and UL_TFC6 are part of minimum set of TFCs.						
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB6: Test data size has been set to DL TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit). <del>As the TTI for RB5 and RB6 is the same for both downlink and uplink then UL RLC SDU size has been set to achieve UE to return one SDU per TTI, i.e. the UL RLC SDU size for RB6 has been set equal to the uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit) and the UL RLC SDU size for RB5 has been set equal to the uplink TB size.</del>						
NOTE 3: RB6 (TF1): For sub-tests where uplink transport format TF1 (1x336) is used then no adoption to the difference in downlink TTI (20 ms) and uplink TTI (40ms) is possible as this would require the UE to concatenate 2 SDUs into one PDU. For these sub-tests the UL RLC SDU size is set equal to the payload size of the UL TF under test minus 8 bits (the size of 7 bit length indicator and expansion bit).						
NOTE 4: RB8 (TF2): For sub-tests where uplink transport formats TF2 (2x336) is used then to adopt to the difference in downlink TTI (20 ms) and uplink TTI (40ms) the UL RLC SDU size has been chosen such that 2 SDUs will be returned per uplink TTI. I.e. the UL RLC SDU size is set equal to half the payload size of the UL TF under test minus 8 bits (the size of 7 bit length indicator and expansion bit).						

#### 14.2.51b.1.4 Test requirements

See 14.1.2 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15a and step 15b the UE transmitted transport format shall be within the set of restricted TFCs as specified for the actual sub-test.
3. At step 15a and step 15b the UE shall return
  - for sub-test 1, 2: ~~an~~ RLC SDUs on RB6 having the same content as sent by SS; and no data shall be received on RB5.
  - for sub-test 2: RLC SDUs on RB6 having the first 312 bits equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB5.
  - for sub-test 3, 4: ~~an~~ RLC SDUs on RB5 having the same content as sent by SS; ~~and~~ RLC SDUs on RB6 having the content equal to the first ~~312~~~~632~~ bits of the test data sent by the SS in downlink
  - for sub-test 5: ~~an~~ RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6.
  - for sub-test 6, ~~7~~ : ~~an~~ RLC SDUs on RB5 and RB6 having the same content as sent by SS
  - for sub-test 7 : RLC SDUs on RB5 having the same content as sent by SS; and RLC SDUs on RB6 having the content equal to the first 312 bits of the test data sent by the SS in downlink
  - for sub-test 8, 9 : ~~on RB5~~ ~~an~~ RLC SDUs on RB5 having the same content as sent by SS; ~~and~~ RLC SDUs on RB6 having the content equal to the first ~~312~~~~632~~ bits of the test data sent by the SS in downlink
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

#### 14.2.51b.2 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 40 ms TTI + Interactive or background / UL:16 DL:64 kbps / PS RAB

##### 14.2.51b.2.1 Conformance requirement

See 14.2.4.1.

## 14.2.51b.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.51b for the 40 ms TTI case.

## 14.2.51b.2.3 Method of test

See 14.1.2 for test procedure.

For the PS UL:16/DL:64 kbps radio bearer the downlink TTI is 20ms while the uplink TTI is 40ms. As the SS will send one DL SDU every 20 ms then the UE test loop function will return 2 UL SDUs per uplink TTI. To not cause uplink transmission buffer overflow then the UL RLC SDU size should be chosen such that the UE will transmit 2 RLC SDUs per uplink TTI. For the case when the transport format under test does not allow for 2 SDUs to fit into the transport format size without requiring concatenation then the UL RLC SDU size shall be chosen such that one SDU is returned per uplink TTI.

Uplink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 16 kbps, <u>40 ms TTI</u> )	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	4x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF0, TF1, TF0)
UL_TFC2	(TF0, TF2, TF0)
UL_TFC3	(TF1, TF0, TF0)
UL_TFC4	(TF1, TF1, TF0)
UL_TFC5	(TF1, TF2, TF0)
UL_TFC6	(TF0, TF0, TF1)
UL_TFC7	(TF0, TF1, TF1)
UL_TFC8	(TF0, TF2, TF1)
UL_TFC9	(TF1, TF0, TF1)
UL_TFC10	(TF1, TF1, TF1)
UL_TFC11	(TF1, TF2, TF1)

Downlink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 64 kbps, <u>20 ms TTI</u> )	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	4x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A
	TF3, bits	N/A	3x336	N/A
	TF4, bits	N/A	4x336	N/A

Downlink TFCS:

<b>TFCI</b>	<b>(RB5, RB6, DCCH)</b>
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF0, TF1, TF0)
DL_TFC2	(TF0, TF2, TF0)
DL_TFC3	(TF0, TF3, TF0)
DL_TFC4	(TF0, TF4, TF0)
DL_TFC5	(TF1, TF0, TF0)
DL_TFC6	(TF1, TF1, TF0)
DL_TFC7	(TF1, TF2, TF0)
DL_TFC8	(TF1, TF3, TF0)
DL_TFC9	(TF1, TF4, TF0)
DL_TFC10	(TF0, TF0, TF1)
DL_TFC11	(TF0, TF1, TF1)
DL_TFC12	(TF0, TF2, TF1)
DL_TFC13	(TF0, TF3, TF1)
DL_TFC14	(TF0, TF4, TF1)
DL_TFC15	(TF1, TF0, TF1)
DL_TFC16	(TF1, TF1, TF1)
DL_TFC17	(TF1, TF2, TF1)
DL_TFC18	(TF1, TF3, TF1)
DL_TFC19	(TF1, TF4, TF1)

Sub-tests:

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs <a href="#">(note 1)</a>	UL RLC SDU size (bits) <a href="#">(note 2)</a> <a href="#">Note 4</a>	Test data size (bits) <a href="#">(note 2)</a> <a href="#">Note 4</a>
1	DL_TFC1, DL_TFC11	UL_TFC1, UL_TFC7	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7	RB5: 2560 RB6: 312 <a href="#">(note 3)</a>	RB5: No data RB6: 312
2	DL_TFC2, DL_TFC12	UL_TFC2, UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 2560 RB6: <del>312</del> <a href="#">(note 4)</a>	RB5: No data RB6: 632
3	DL_TFC3, DL_TFC13	UL_TFC2, UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 2560 RB6: <del>312</del> <a href="#">(note 4)</a>	RB5: No data RB6: 952
4	DL_TFC4, DL_TFC14	UL_TFC2, UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 2560 RB6: <del>312</del> <a href="#">(note 4)</a>	RB5: No data RB6: 1272
5	DL_TFC5, DL_TFC15	UL_TFC3, UL_TFC9	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 2560 RB6: 312	RB5: 2560 RB6: No data
6	DL_TFC6, DL_TFC16	UL_TFC4, UL_TFC10	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10	RB5: 2560 RB6: 312 <a href="#">(note 3)</a>	RB5: 2560 RB6: 312
7	DL_TFC7, DL_TFC17	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 2560 RB6: <del>312</del> <a href="#">(note 4)</a>	RB5: 2560 RB6: 632
8	DL_TFC8, DL_TFC18	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 2560 RB6: <del>312</del> <a href="#">(note 4)</a>	RB5: 2560 RB6: 952
9	DL_TFC9, DL_TFC19	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 2560 RB6: <del>312</del> <a href="#">(note 4)</a>	RB5: 2560 RB6: 1272

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs <a href="#">(note 1)</a>	UL RLC SDU size (bits) <a href="#">(note 2)</a> <a href="#">Note 4</a>	Test data size (bits) <a href="#">(note 2)</a> <a href="#">Note 4</a>
<p><a href="#">NOTE 1: UL_TFC0, UL_TFC1, UL_TFC3 and UL_TFC6 are part of minimum set of TFCs.</a></p> <p><a href="#">NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</a>  <a href="#">RB6: Test data size has been set to DL TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).</a></p> <p><del>NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</del>  <del>RB6: Test data size has been set to DL TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit). As the TTI for RB5 and RB6 is the same for both downlink and uplink then UL RLC SDU size has been set to achieve UE to return one SDU per TTI, i.e. the UL RLC SDU size for RB6 has been set equal to the uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit) and the UL RLC SDU size for RB5 has been set equal to the uplink TB size.</del></p> <p><a href="#">NOTE 3: RB6 (TF1): For sub-tests where uplink transport format TF1 (1x336) is used then no adoption to the difference in downlink TTI (20 ms) and uplink TTI (40ms) is possible as this would require the UE to concatenate 2 SDUs into one PDU. For these sub-tests the UL RLC SDU size is set equal to the payload size of the UL TF under test minus 8 bits (the size of 7 bit length indicator and expansion bit).</a></p> <p><a href="#">NOTE 4: RB8 (TF2): For sub-tests where uplink transport formats TF2 (2x336) is used then to adopt to the difference in downlink TTI (20 ms) and uplink TTI (40ms) the UL RLC SDU size has been chosen such that 2 SDUs will be returned per uplink TTI. I.e. the UL RLC SDU size is set equal to half the payload size of the UL TF under test minus 8 bits (the size of 7 bit length indicator and expansion bit).</a></p>						

#### 14.2.51b.2.4 Test requirements

See 14.1.2 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15a and step 15b the UE transmitted transport format shall be within the set of restricted TFCs as specified for the actual sub-test.
3. At step 15a and step 15b the UE shall return
  - for sub-test 1, ~~2~~: ~~an~~ RLC SDUs on RB6 having the same content as sent by SS; and no data shall be received on RB5.
  - [for sub-test 2: RLC SDUs on RB6 having the first 312 bits equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB5.](#)
  - for sub-test 3, 4: ~~an~~ RLC SDUs on RB5 having the same content as sent by SS; and [RLC SDUs](#) on RB6 having the content equal to the first ~~312~~[632](#) bits of the test data sent by the SS in downlink
  - for sub-test 5: ~~an~~ RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6.
  - for sub-test 6, ~~7~~: ~~an~~ RLC SDUs on RB5 and RB6 having the same content as sent by SS
  - [for sub-test 7: RLC SDUs on RB5 having the same content as sent by SS; and RLC SDUs on RB6 having the content equal to the first 312 bits of the test data sent by the SS in downlink](#)
  - for sub-test 8, 9: ~~on RB5~~ ~~an~~ RLC SDUs on RB5 having the same content as sent by SS; and [RLC SDUs](#) on RB6 having the content equal to the first ~~312~~[632](#) bits of the test data sent by the SS in downlink
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

## CHANGE REQUEST

№ **34.123-1 CR 623** № rev **2** № Current version: **5.5.0** №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	№ Corrections to P2 RRC test case 8.4.1.17		
<b>Source:</b>	№ Motorola		
<b>Work item code:</b>	№ TEI	<b>Date:</b>	№ 04-11-2003
<b>Category:</b>	№ <b>F</b>	<b>Release:</b>	№ Rel-5
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	№ UE should sent measurement report on DCH 5  SS is not waiting for the second 4b Measurement Report on transport channel DCH1 before sending the Measurement Control with the new configuration. The message sequence could be different depending on the speed of the SS executing the test - if it is slow then it might receive the second 4b Measurement Report before it sends the Measurement Control.
<b>Summary of change:</b>	№ Update message contents of measurement report in step 6 to accept only UL Transport Channel Identity 5  Added step 6a to receive second 4b Measurement Report for DCH 1
<b>Consequences if not approved:</b>	№ Test may incorrectly pass a bad UE Test sequence not deterministic

<b>Clauses affected:</b>	№ 8.4.1.17										
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications    № Test specifications O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Y	N										
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<b>Other comments:</b>	№ Affects R99, REL-4, REL-5.										

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Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:



- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

### 8.4.1.17 Measurement Control and Report: Traffic volume measurement for transition from idle mode to CELL\_DCH state

8.4.1.17.1 Definition

8.4.1.17.2 Conformance requirement

Upon transition from idle mode to CELL\_DCH state, the UE shall:

- 1> begin a traffic volume type measurement, assigned in System Information Block type 11 (or System Information Block type 12).

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in TS 25.331 subclause 8.6 unless otherwise specified below.

The UE shall:

- 1> read the IE "Measurement command";
- 1> if the IE "Measurement command" has the value "setup":
  - 2> store this measurement in the variable MEASUREMENT\_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
  - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement":  
...  
2> for measurement type "UE positioning measurement":  
...  
2> for any other measurement type:
    - 3> if the measurement is valid in the current RRC state of the UE:
      - 4> begin measurements according to the stored control information for this measurement identity.

#### Reference

3GPP TS 25.331 clause 8.4.1.8.4, 3GPP TS 25.331 clause 8.4.1.3.

### 8.4.1.17.3 Test Purpose

1. To confirm that after a state transition from idle mode to CELL\_DCH state, the UE begin a traffic volume type measurement, as specified in System Information Block type 11 or 12 messages on BCCH. When entering CELL\_DCH state, the UE shall send a MEASUREMENT REPORT message when reporting criteria is satisfied.
2. During CELL\_DCH state, if the UE receives a MEASUREMENT CONTROL message, it shall perform the measurement and reporting tasks based on the MEASUREMENT CONTROL message received.

### 8.4.1.17.4 Method of test

#### Initial Condition

System Simulator: 1cell

UE: "Registered idle mode on CS" (state 2) or "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

## Test Procedure

The UE is initially in idle mode. The System Information Block type 11 message is modified with respect to the default settings to request UE to perform traffic volume measurements. Key measurement parameters are as follows: measurement quantity = "Average RLC Buffer Payload", report criteria = "Event triggered, event 4B", reporting threshold = "8K", report transfer mode = "Unacknowledged mode". The System Information type 12 message is not broadcasted.

SS prompts the operator to make an outgoing call of a supported traffic class. SS and UE shall execute procedure P3 (for CS service) or P5 (for PS service). Next SS and UE shall execute procedure P7 (for CS service) or P9 (for PS service). Then SS and UE shall execute procedure P11 (for CS service) or P13 (for PS service).

UE shall begin traffic volume measurements after entering in CELL\_DCH state. The UE shall send MEASUREMENT REPORT message because uplink traffic is below threshold.

SS sends MEASUREMENT CONTROL message to the UE. This message reconfigures measurement information saved from System information type 11. Key measurement parameters are as follow: measurement type = "traffic volume measurement", measurement quantity = "RLC Buffer Payload", report criteria = "Periodic reporting criteria", reporting interval = "8 seconds", reporting amount = "8". The UE shall periodically send MEASUREMENT REPORT message to report RLC Buffer Payload for each RB.

SS sends MEASUREMENT CONTROL message to release traffic volume measurement. UE shall not send measurement report after receiving this message. SS calls for generic procedure C.3 to check that UE is in CELL\_DCH state.

## Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	System Information Block type 11	The UE is idle mode and camped onto cell 1. System Information Block type 11 to be transmitted is different from the default settings (see specific message contents)
2		↔	SS executes procedure P3 (clause 7.4.2.1.2) or P5 (clause 7.4.2.2.2) specified in TS 34.108.	
3		↔	SS executes procedure P7 (clause 7.4.2.3.2) or P9 (clause 7.4.2.4.2) specified in TS 34.108.	
4		↔	SS executes procedure P11 (clause 7.4.2.5.2) or P13 (clause 7.4.2.6.2) specified in TS 34.108.	
5		→	Void	
6		→	MEASUREMENT REPORT	Event 4B is triggered <a href="#">on DCH 5</a> . This message should come on RB1.
<a href="#">6a</a>		<a href="#">→</a>	<a href="#">MEASUREMENT REPORT</a>	<a href="#">Event 4B is triggered on DCH 1. This message should come on RB1 (only for PS)</a>
7		←	MEASUREMENT CONTROL	Periodic Traffic volume measurement reporting is requested.

8	→	MEASUREMENT REPORT	This message should come on RB2.
9	→	MEASUREMENT REPORT	Time difference between earlier and this MEASUREMENT REPORT message should be 8 Seconds.
10	←	MEASUREMENT CONTROL	Release traffic volume measurement.
11			Wait for 8 Seconds to confirm that UE does not send measurement report message.
12	↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Content

System Information Block type 11 (Step 1) (FDD)

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not Present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 1
- Primary CPICH Tx power	Not Present
- TX Diversity indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity for RACH reporting	Not Present
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	2
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	Average RLC Buffer Payload
- Time Interval to take an average	200 msec
- Traffic volume reporting quantity	
- RB buffer payload	False
- RB buffer payload average	True
- RB buffer payload variance	False
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	CELL_DCH
- Measurement reporting mode	
- Measurement report transfer mode	Unacknowledged Mode
- Periodical or event trigger	Event Trigger
- CHOICE reporting criteria	Traffic volume measurement reporting criteria
- Parameters sent for each transport channel	
- Uplink transport channel type	Not Present
- UL transport channel id	Not Present
- Parameters required for each Event	
- Traffic volume event identity	4B
- Reporting threshold	8K
- Time to trigger	5000 ms
- Pending time after trigger	16000 ms
- Tx interruption after trigger	Not Present

System Information Block type 11 (Step 1) (TDD)

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	Not used
- Use of HCS	
- Intra-frequency measurement system information	Not Present
- Intra-frequency measurement identity	Not Present
- Intra-frequency cell info list	Remove no intra-frequency cells
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	1
- Intra-frequency cell id	1
- Cell info	0 dB
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	Set to same as used for cell 1
- TX Diversity indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity for RACH reporting	Not Present
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present
- Traffic volume measurement ID	2
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	Average RLC Buffer Payload
- Traffic volume reporting quantity	Average RLC Buffer Payload
- Time Interval to take an average	200 msec
- RB buffer payload	FALSE
- RB buffer payload average	TRUE
- RB buffer payload variance	FALSE
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	CELL_DCH
- Measurement reporting mode	Unacknowledged Mode
- Measurement report transfer mode	Event Trigger
- Periodical or event trigger	Event Trigger
- Report criteria system Information	Traffic volume reporting criteria
- Event specific parameters	Traffic volume reporting criteria
- Event id	4B
- Reporting threshold	8K
- Time to trigger	Not Present
- Pending time after trigger	Not Present
- Tx interruption after trigger	Not Present

## MEASUREMENT REPORT (Step 6/6a)

Information Element	Value/remark
Measurement identity	Check to see if set to 2
Measured Results	
- CHOICE measurement	Check to see if set to "traffic volume measured results list"
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is present
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is present
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is present
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is present
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20 (for the PS case only)
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is present
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	
- UL transport channel type causing the event	DCH
- UL Transport Channel identity	<del>Either 1 or 5</del> <a href="#">5 (step 6)</a> , <a href="#">1 (step 6a)</a>
- Traffic volume event identity	4B

## MEASUREMENT CONTROL (Step 7)

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Set up
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RBe	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	Not Present
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	8
- Reporting interval	8 Sec
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 8,9)

Information Element	Value/remark
Measurement identity	2
Measured Results	Traffic volume measured results list
- CHOICE measurement	
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

MEASUREMENT CONTROL (Step 10)

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Release
Measurement reporting mode	Not Present
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

8.4.1.17.5 Test Requirement

After step 5, due to triggering of event 4B, the UE shall send MEASUREMENT REPORT message using unacknowledged mode of RLC. After step 7, UE shall send MEASUREMENT REPORT message using Acknowledged mode of RLC. After 8 seconds UE shall send second MEASUREMENT REPORT message. After step 10, the UE shall not send MEASUREMENT REPORT message.



3GPP TSG T1 Meeting #21  
 Budapest, Hungary, 3<sup>rd</sup> – 7<sup>th</sup> November 2003

Tdoc # T1-031688

CR-Form-v7
<b>CHANGE REQUEST</b>
⌘ <b>TS 34.123-1 CR 629</b> ⌘ rev <b>2</b> ⌘ Current version: <b>5.5.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections to 34.123-1 v5.5.0 Package 1 test case 8.1.2.2		
<b>Source:</b>	⌘ Panasonic		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 06/11/03
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)		2 (GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)		R96 (Release 1996)
	<b>B</b> (addition of feature),		R97 (Release 1997)
	<b>C</b> (functional modification of feature)		R98 (Release 1998)
	<b>D</b> (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ It is not possible for the downlink message "RRC Connection Setup" to have both <i>Critical Extension</i> and <i>Initial UE Identity</i> at the same time due to the structural constraint imposed by ASN.1 syntax. As a result, it is impossible to implement step 6 of TC 8.1.2.2.
	Reason for changes in revision 1 of T1-031495
	To make the test prose in-line with the TTCN.
<b>Summary of change:</b>	⌘ Step 6 and step 7 are removed.
	Changes made in revision 1 of T1-031495:
	Step 6 and 67 are re-installed.
	In step 6, CELL_PCH is included in the IE "RRC state indicator" to trigger invalid configuration.
	Changes made in revision 2 of T1-031495:
	Second test requirement has been re-installed.
<b>Consequences if not approved:</b>	⌘ This test case could not be implemented.

<b>Clauses affected:</b>	⌘ 8.1.2.2										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"> </td> <td style="padding: 2px;">X</td> </tr> <tr> <td style="padding: 2px;"> </td> <td style="padding: 2px;">X</td> </tr> <tr> <td style="padding: 2px;"> </td> <td style="padding: 2px;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications	⌘
Y	N										
	X										
	X										
	X										
		Test specifications									
		O&M Specifications									

**Other comments:** ☹ Affects R'99, Rel-4 and Rel-5 UEs.

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☹ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 8.1.2.2 RRC Connection Establishment: Success after T300 timeout

### 8.1.2.2.1 Definition

### 8.1.2.2.2 Conformance requirement

If the UE has not yet received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL\_UE\_IDENTITY; and

if expiry of timer T300 occurs:

the UE shall:

- 1> check the value of V300; and
- 2> if V300 is equal to or smaller than N300:
  - 3> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;
  - 3> submit a new RRC CONNECTION REQUEST message to lower layers for transmission on the uplink CCCH;
  - 3> increment counter V300;
  - 3> restart timer T300 when the MAC layer indicates success or failure to transmit the message.
- 2> if V300 is greater than N300:
- ...

### Reference

3GPP TS 25.331 clause 8.1.3.5.

### 8.1.2.2.3 Test purpose

To confirm that the UE retries to establish the RRC connection until V300 is greater than N300 after the expiry of timer T300 when the SS transmits no response for an RRC CONNECTION REQUEST message.

### 8.1.2.2.4 Method of test

#### Initial Condition

System Simulator: 1 cell. SCCPCH configuration as specified in 6.1.1 of TS 34.108.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

NOTE: This test requires that N300 is bigger than 0, which is the case (see default contents of SIB 1, specified in TS 34.108). Expiry of timer T300 is verified only for N300 values exceeding 1.

#### Test Procedure

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 5 message is modified and this modification is notified to the UE. An internal counter K in SS is initialized to a value = 0. Following this, the UE shall transmit an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by use of selected PRACH from the available PRACH No.1 and PRACH No.2, after the operator attempts to make an outgoing call. SS ignores this message, increments K every time such a message is received and waits for T300 timer to expire. This cycle is repeated until K reaches N300. When K is equal to N300, the SS transmits an RRC CONNECTION SETUP message containing an [IE "RRC state indicator" set to 'CELL\\_PCH'](#) ~~unexpected-critical-message-extension~~ as specified in step 6 to the UE. The UE shall send another RRC CONNECTION REQUEST message on the uplink CCCH. SS replies with a valid RRC CONNECTION SETUP message. The UE shall then acknowledge the establishment of RRC connection by sending the RRC CONNECTION SETUP COMPLETE message on uplink DCCH.

## Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PAGING TYPE 1	SS transmits the paging message which comprises IE "BCCH Modification Information", with the "Value Tag" different from the "MIB Value Tag" of the current Master Information Block. Also the modification time is set to 2048 radio frames from the current SFN. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH. See specific message contents.
1a		←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 5	SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting. At the same time, SS starts to transmit the affected SIB TYPE 5 messages. See specific message contents.
2				SS initializes counter K to 0. Operator is asked to make an outgoing call and SS starts to wait for RRC CONNECTION REQUEST on uplink CCCH.
3		→	RRC CONNECTION REQUEST	See the clause 9 in TS 34.108 on default message content
4				SS increments K.
5				SS checks to see if K is equal to N300. If so, goes to step 6. Else, continues to execute step 3.
6		←	RRC CONNECTION SETUP	<del>Use an invalid message in ASN.1. See specific message contents for this message.</del> IE "RRC state indicator" is set to 'CELL_PCH'.
7		→	RRC CONNECTION REQUEST	See specific message contents.
8		←	RRC CONNECTION SETUP	This is a legal message. See the clause 9 in TS 34.108 on default message content for RRC.
9				The UE configures the layer 1 and layer 2.
10		→	RRC CONNECTION SETUP COMPLETE	See clause 9 in TS 34.108 on default message content

## Specific Message Contents

## PAGING TYPE 1 (Step 1)

Information Element	Value/remark
Message Type	
Paging record list	Not present
BCCH modification info	
- MIB Value Tag	2
- BCCH Modification time	Set to (current SFN + 2048)

## SYSTEM INFORMATION TYPE 5 (Step 1a) - (FDD)

Use the default parameter values for the system information block with the same type specified in clause 6.1.1 of TS 34.108, with the following exceptions:

- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	FDD
- Available Signature	'0000 0000 1111 1111'B
- Available SF	64
- Preamble scrambling code number	0
- Puncturing Limit	1.00
- Available Sub Channel number	'1111 1111 1111'B
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- RLC size	360
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	
- Normal	
- TFCI Field 1 information	
- CHOICE TFCS representation	Complete reconfiguration
- TFCS addition information	
- CHOICE CTFC Size	2 bit
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Computed Gain Factor
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0dB
- CTFC information	1
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor βc	11
- Gain factor βd	15
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0dB
- PRACH partitioning	
- Access Service Class	
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#1)
- Available signature End Index	7 (ASC#1)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#3)
- Available signature End Index	7 (ASC#3)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	

- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#5)
- Available signature End Index	7 (ASC#5)
- Assigned Sub-Channel Number	'1111'B
	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
	Not Present
- ASC Setting	FDD
- ASC Setting	0 (ASC#7)
- CHOICE mode	7 (ASC#7)
- Available signature Start Index	'1111'B
- Available signature End Index	The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- Assigned Sub-Channel Number	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
CHOICE mode	FDD
- Primary CPICH DL TX power	31
- Constant value	-10
- PRACH power offset	
- Power Ramp Step	3dB
- Preamble Retrans Max	4
- RACH transmission parameters	
- Mmax	2
- NB01min	3 slot
- NB01max	10 slot
- AICH info	
- Channelisation code	3
- STTD indicator	FALSE
- AICH transmission timing	0
- PRACH info (PRACH No.2)	
- CHOICE mode	FDD
- Available Signature	'0000 0000 1111 1111'B
- Available SF	64
- Preamble scrambling code number	1
- Puncturing Limit	1.00
- Available Sub Channel number	'1111 1111 1111'B
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- RLC size	360
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150

- CRC size	16
- RACH TFCS	
- Normal	
- TFCI Field 1 information	
- CHOICE TFCS representation	Complete reconfiguration
- TFCS addition information	
- CHOICE CTFC Size	2 bit
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Computed Gain Factor
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0 dB
- CTFC information	1
- Reference TFC ID	0
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor $\beta_c$	11
- Gain factor $\beta_d$	15
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0dB
- PRACH partitioning	
- Access Service Class	
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#1)
- Available signature End Index	7 (ASC#1)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#3)
- Available signature End Index	7 (ASC#3)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#5)
- Available signature End Index	7 (ASC#5)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#7)
- Available signature End Index	7 (ASC#7)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)



- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
CHOICE mode	FDD
- Primary CPICH DL TX power	31
- Constant value	-10
- PRACH power offset	
- Power Ramp Step	3dB
- Preamble Retrans Max	4
- RACH transmission parameters	
- Mmax	2
- NB01min	3 slot
- NB01max	10 slot
- AICH info	
- Channelisation code	4
- STTD indicator	FALSE
- AICH transmission timing	0

## SYSTEM INFORMATION TYPE 5 (Step 1a) – 3.84 Mcps TDD

- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Timeslot Number	14
- PRACH Channelisation Code	
- CHOICE SF	8
- Channelisation Code List	
- Channelisation Code	8/1
- Channelisation Code	8/2
- Channelisation Code	8/3
- Channelisation Code	8/4
- PRACH Midamble	Direct
-PNBSCH allocation	Not Present
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD

- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD
- PRACH info (PRACH No.2)	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Timeslot Number	14
- PRACH Channelisation Code	
- CHOICE SF	8
- Channelisation Code List	
- Channelisation Code	8/5 where i denotes an unassigned code
- Channelisation Code	8/6 where i denotes an unassigned code
- Channelisation Code	8/7 where i denotes an unassigned code
- Channelisation Code	8/8 where i denotes an unassigned code
- PRACH Midamble	Direct
-PNBSCH allocation	Not Present
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD

- Available SYNC_UL codes indices	'00001111'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD

## SYSTEM INFORMATION TYPE 5 (Step 1a) – 1.28 Mcps TDD

- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- SYNC_UL info	
- SYNC_UL codes bitmap	'11110000'B
- PRX <sub>UpPCHdes</sub>	10
- Power Ramping Step	3
- Max SYNC_UL Transmissions	8
- Mmax	32
- PRACH Definition	
- Timeslot Number	
- CHOICE TDD option	1.28 Mcps TDD
- Timeslot number	1
- PRACH Channelisation Code	
- Channelisation Code List	
- Channelisation Code	8/1
- Midamble shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	8
- Midamble Shift	Not Present
- FPACH info	
- Timeslot number	6
- Channelisation code	16/16
- Midamble Shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	16
- Midamble Shift	Not Present
- WT	4
- PNBSCH allocation	Not Present
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	½
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD

- Available SYNC_UL codes indices	'11110000'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD
- PRACH info (PRACH No.2)	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- SYNC_UL info	
- SYNC_UL codes bitmap	'11110000'B
- PRX <sub>UpPCHdes</sub>	10
- Power Ramping Step	1
- Max SYNC_UL Transmissions	8
- Mmax	32
- PRACH Definition	
- Timeslot Number	
- CHOICE TDD option	1.28 Mcps TDD
- Timeslot number	1
- PRACH Channelisation Code	
- Channelisation Code List	
- Channelisation Code	8/2
- Midamble shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	8
- Midamble Shift	Not Present
- FPACH info	
- Timeslot number	An available down-link timeslot

- Channelisation code	16/15
- Midamble Shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	16
- Midamble Shift	Not Present
- WT	4
- PNBSCH allocation	Not Present
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)

- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD

RRC CONNECTION SETUP (Step 6)

SS sends a message containing a critical extension not defined for the protocol release supported by the UE, as indicated in the IE "Access stratum release indicator":

Information Element	Value/remark
RRC-transaction-identifier	Arbitrarily selects an integer between 0 and 3
Critical-extensionsRRC state indicator	U1-CELL_PCH

RRC CONNECTION REQUEST (Step 7)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Protocol Error Indicator	Check to see if set to TRUE

8.1.2.2.5 Test requirement

After step 2 the UE shall select either PRACH No.1 or PRACH No.2 and transmit an RRC CONNECTION REQUEST message.

After step 6 the UE shall re-send another RRC CONNECTION REQUEST message.

After step 9 the UE shall transmit an RRC CONNECTION SETUP COMPLETE message and establish an RRC connection on the DCCH logical channel.



## CHANGE REQUEST

№ **34.123-1 CR 649** № rev **5.5.0** № Current version: **5.5.0** №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	№ Corrections to P2 GMM test case 12.2.1.3		
<b>Source:</b>	№ Motorola		
<b>Work item code:</b>	№ TEI	<b>Date:</b>	№ 06-11-2003
<b>Category:</b>	№ <b>F</b>	<b>Release:</b>	№ Rel-5
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="http://www.3gpp.org/Specs/tr21/900">TR 21.900</a> .		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	№ A Class A UE is allowed to register for CS services when network rejects PS Attach Request with cause 'PS Services Not Allowed'. The USIM is considered invalid only for PS Services.  A Class A UE shall initiate CS registration procedure once it reselects to a cell in a different PLMN.
<b>Summary of change:</b>	№ Added step 7a for CS registration applicable for Class A UE
<b>Consequences if not approved:</b>	№ Test as specified may incorrectly a conformant mobile

<b>Clauses affected:</b>	№ 12.2.1.3								
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications    № Test specifications O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N								
<input type="checkbox"/>	<input checked="" type="checkbox"/>								
<input type="checkbox"/>	<input checked="" type="checkbox"/>								
<input type="checkbox"/>	<input checked="" type="checkbox"/>								
<b>Other comments:</b>	№ Affects R99, REL-4, REL-5.								

### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked № contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>

For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

### 12.2.1.3 PS attach / rejected / IMSI invalid / PS services not allowed

12.2.1.3.1 Definition

12.2.1.3.2 Conformance requirement

- 1) If the network rejects a PS attach procedure from the User Equipment with the cause 'PS services not allowed', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.
- 2) If the network rejects a PS attach procedure from the User Equipment with the cause 'PS services not allowed' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

#### Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.3.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'PS services not allowed' (no valid PS-subscription for the IMSI).

12.2.1.3.4 Method of test

#### Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (HPLMN, RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).  
Both cells are operating in network operation mode II.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS rejects a normal attach with the cause value 'PS services not allowed'. The SS checks that the UE does not perform PS attach in another PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.  Set the cell type of cell A to the "Serving cell".  Set the cell type of cell B to the "Non-Suitable cell".  (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 17.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'PS attach'  Mobile identity = P-TMSI-1  Routing area identity = RAI-1
5	<-		ATTACH REJECT	GMM cause = 'PS services not allowed'
5a		SS		The SS releases the RRC connection.
6		SS		The following messages are sent and shall be received on cell B.  Set the cell type of cell A to the "Non-Suitable cell".  Set the cell type of cell B to the "Serving cell".  (see note)
7	UE			Cell B is preferred by the UE.
<a href="#">7a</a>	<a href="#">UE</a>		<a href="#">Registration on CS</a>	<a href="#">See TS 34.108</a>  <a href="#">This is applied only for UE in UE operation mode A.</a>
8	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
9	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
10	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
10a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".

11	->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
11a	<-	AUTHENTICATION AND CIPHERING REQUEST	
11b	->	AUTHENTICATION AND CIPHERING RESPONSE	
11c	SS		The SS starts integrity protection.
12	<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
13	->	ATTACH COMPLETE	
14	UE		The UE is switched off or power is removed (see ICS).
15	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
15a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
16			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell".  (see note)
17	UE		The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 15.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

#### Specific message contents

None.

#### 12.2.1.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step8, UE shall:

- not perform a PS attach procedure.

At step11, after the UE is switched on or a USIM is replaced, UE shall:

- perform the PS attach procedure.



CR-Form-v7

## CHANGE REQUEST

⌘ **34.123-1 CR 596** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ CR to TS 34.123-1 [REL-5] Package 1 SM test cases 11.3.1 PDP context deactivation initiated by the UE and 11.3.2 PDP context deactivation initiated by the UE. (Revision of T1-031367)		
<b>Source:</b>	⌘ Anite Telecoms		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 07/11/03
<b>Category:</b>	⌘ F	<b>Release:</b>	⌘ REL-5

<b>Reason for change:</b>	⌘ After a PDP context has been deactivated a non auto-attach UE might perform a PS Detach making the following SM entity test steps inappropriate from Core Network point of view.
<b>Summary of change:</b>	⌘ Reference to the PICS "Support of automatic PS attach procedure at switch on" is added. The test cases are made applicable only to auto-attach UEs (see T1-031709).
<b>Consequences if not approved:</b>	⌘ A non-auto attach UE might not behave in the expected manner.

<b>Clauses affected:</b>	⌘ 11.3.1;11.3.2.										
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications	⌘ 34.123-2, 34.123-3
Y	N										
	X										
	X										
	X										
		Test specifications									
		O&M Specifications									
<b>Other comments:</b>	⌘ Affects R99, Rel-4 and Rel-5 test cases.										

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request



## 11.3 PDP context deactivation procedures

### 11.3.1 PDP context deactivation initiated by the UE

#### 11.3.1.1 Definition

#### 11.3.1.2 Conformance requirement

In order to deactivate a PDP context, the UE sends a DEACTIVATE PDP CONTEXT REQUEST message to the network, enters the state PDP-INACTIVE-PENDING and starts timer T3390. The message contains the transaction identifier (TI) in use for the PDP context to be deactivated and a cause code that typically indicates one of the following causes:

- #26: insufficient resources;
- #36: regular PDP context deactivation; or
- #37: QoS not accepted.

The network shall reply with the DEACTIVATE PDP CONTEXT ACCEPT message. Upon receipt of the DEACTIVATE PDP CONTEXT ACCEPT message, the UE shall stop timer T3390. In UMTS, the network shall initiate the release of Radio Access Bearer associated with this PDP context.

Whenever any session management message except REQUEST PDP CONTEXT ACTIVATION or SM-STATUS is received by the UE specifying a transaction identifier which is not recognised as relating to an active context or to a context that is in the process of activation or deactivation, the UE shall send a SM-STATUS message with cause #81 "invalid transaction identifier value" using the received transaction identifier value including the extension octet and remain in the PDP-INACTIVE state.

#### Reference

3GPP TS 24.008 clauses 6.1.3.4, 6.1.3.4.1 and 8.3.2 (b).

#### 11.3.1.3 Test purpose

To test the behaviour of the UE upon receipt of a DEACTIVATE PDP CONTEXT ACCEPT message from the SS in PDP context deactivation procedure initiated by the UE.

To test the behaviour of the UE upon receipt of a session management message (except REQUEST PDP CONTEXT ACTIVATION or SM-STATUS) specifying a transaction identifier which is not recognised as relating to an active context or to a context that is in the process of activation or deactivation.

#### 11.3.1.4 Method of test

##### Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

##### Related ICS/IXIT statements

- PS Supported yes/no
- Method of activating a PDP context

- —Method of deactivating the PDP context
- Support of automatic PS attach procedure at switch on        yes/no

Test procedure

A PDP context is activated by the user and accepted by the SS. PDP context deactivation is then requested by the user. The UE shall send a DEACTIVATE PDP CONTEXT REQUEST message to the SS. The SS shall then reply with a DEACTIVATE PDP CONTEXT ACCEPT message. The SS shall then wait for T3390 seconds to ensure T3390 has been stopped and that no further messages are sent from the UE. The SS shall then send a MODIFY PDP CONTEXT REQUEST for the deactivated context and the UE shall reply with an SM STATUS message with cause #81 'transaction identifier not known'.

Expected sequence

Step	Direction		Me_s_sage	Comments
	UE	SS		
1		UE		Initiate a context activation
1a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to either Originating Conversational Call, Originating Streaming Call, Originating Interactive Call, Originating Background Call or Originating High Priority Signalling
1b		→	SERVICE REQUEST	
1c		SS		The SS starts ciphering and integrity protection.
2		→	ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context
2a		SS		The SS establishes the RAB.
3		←	ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
4		UE		Initiate a context deactivation
5		→	DEACTIVATE PDP CONTEXT REQUEST	Request a deactivation of a PDP context
6		←	DEACTIVATE PDP CONTEXT ACCEPT	SS accepts the PDP context deactivation and starts waiting for 'T3390'.
6a		SS		The SS releases the RAB.
7		SS		SS waits for expiry of 'T3390' seconds to ensure no further deactivate request messages are sent
8		←	MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Send a modify request to UE for the deactivated context.
9		→	SM STATUS	Cause set to #81

Specific message contents

Steps 2 and 5. TI flag (bit 8) in TI IE is set to 0 (transaction initiated by the UE).

Step 3, 6 and 8. TI flag in TI IE is set to 1.

Steps 2, 3, 5, 6 and 8. The value of TIO IE (bits 5-7) of the transaction identifier (TI) is the same in these test steps.

11.3.1.5 Test requirements

At step 1a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to one of the following causes:

- Originating Conversational Call;
- Originating Streaming Call;

- Originating Interactive Call;
- Originating Background Call or
- Originating High Priority Signalling.

In PDP context deactivation procedure initiated by the UE, upon receipt of a DEACTIVATE PDP CONTEXT ACCEPT message from the SS, the UE shall deactivate PDP context associated with given PDP address and TI.

Then, upon modification procedure initiated by the network, for deactivated PDP context, UE shall reply with SM STATUS message with cause #81.

## 11.3.2 PDP context deactivation initiated by the network

### 11.3.2.1 Definition

### 11.3.2.2 Conformance requirement

In order to deactivate a PDP context, the network sends a DEACTIVATE PDP CONTEXT REQUEST message to the UE and starts timer T3395. The message contains the transaction identifier in use for the PDP context to be deactivated and a cause code that typically indicates one of the following causes:

- # 36: regular PDP context deactivation;
- # 38: network failure; or
- # 39: reactivation requested.

The UE shall, upon receipt of this message, reply with a DEACTIVATE PDP CONTEXT ACCEPT message. Upon receipt of the DEACTIVATE PDP CONTEXT ACCEPT message, the network shall stop the timer T3395. In UMTS, the network shall initiate the release of Radio Access Bearer associated with this PDP context.

### Reference

3GPP TS 24.008 clauses 6.1.3.4, 6.1.3.4.2.

### 11.3.2.3 Test purpose

To test the behaviour of the UE upon receipt of a DEACTIVATE PDP CONTEXT REQUEST message from the SS.

### 11.3.2.4 Method of test

#### Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

#### Related ICS/IXIT statements

- PS Supported yes/no

[—](#) Method of activating a PDP context

- [Support of automatic PS attach procedure at switch on](#) yes/no

## Test procedure

A PDP context is activated by the user and accepted by the SS. A DEACTIVATE PDP CONTEXT REQUEST message is then sent by the SS. The UE shall reply with a DEACTIVATE PDP CONTEXT ACCEPT message. The SS shall then send a MODIFY PDP CONTEXT REQUEST for the deactivated context and the UE shall reply with an SM STATUS message with cause #81 'invalid transaction identifier value'.

## Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a context activation
1a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to either Originating Conversational Call, Originating Streaming Call, Originating Interactive Call, Originating Background Call or Originating High Priority Signalling
1b	→		SERVICE REQUEST	
1c		SS		The SS starts ciphering and integrity protection.
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context
2a		SS		The SS establishes the RAB.
3	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
4	←		DEACTIVATE PDP CONTEXT REQUEST	Request a deactivation of a PDP context
5	→		DEACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context deactivation.
5a		SS		The SS releases the RAB.
6	←		MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Send a modify request to UE for the deactivated context.
7	→		SM STATUS	Cause set to #81

## Specific message contents

Steps 2 and 5. TI flag (bit 8) in TI IE is set to 0 (transaction initiated by the UE).

Steps 3, 4 and 6. TI flag in TI IE is set to 1.

Steps 2, 3, 4, 5 and 6. The value of TIO IE (bits 5-7) of the transaction identifier (TI) is the same in these test steps.

## 11.3.2.5 Test requirements

At step 1a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to one of the following causes:

- Originating Conversational Call;
- Originating Streaming Call;
- Originating Interactive Call;
- Originating Background Call or
- Originating High Priority Signalling.

Upon receipt of a request for deactivation of a PDP context from the SS, the UE shall deactivate PDP context. Then, upon modification procedure initiated by the network, for deactivated PDP context, UE shall reply with SM STATUS message with cause #81, as confirmation that previously SS requested PDP context deactivation was performed by the UE.

## CHANGE REQUEST

⌘ **TS34.123-1 CR 616** ⌘ rev **-** ⌘ Current version: **5.5.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Modification for GMM test cases.		
<b>Source:</b>	⌘ Sony Ericsson Mobile Communications Japan, Inc. Motorola		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 03/11/2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ It is necessary to change test cases in clause 12 in order to:  (A) clarify the setting of ATT flag in GMM test cases. The setting of ATT flag in GMM test cases is unclear in the current version of the specification.  (B) correct Conformance requirement in subclause 12.3.2.5. The content of the current Conformance requirement when the UE deletes any TSMI, LAI and CKSN is incorrect.
<b>Summary of change:</b>	⌘ 1. Clarification of the setting of ATT flag in GMM test cases - The value of ATT flag in the GMM test cases if the SS operates in the network mode of operation II, except for the following 10 test cases is set to OFF. 12.2.1.5c, 12.2.1.5d, 12.2.1.8, 12.3.2.2, 12.4.1.4d proc1, 12.4.1.4d proc2, 12.4.1.5, 12.4.3.3, 12.4.3.4, 12.9.7b - In relation to the above-mentioned modification, IMSI Attach / Detach procedure is removed from the Expected sequence in the applicable test cases.  2. Correction of Conformance requirement for subclause 12.3.2.5 - The Conformance requirement is corrected by adding conditions when the UE deletes any TSMI, LAI and CKSN.

<b>Consequences if not approved:</b>	⌘ The setting of ATT flag in GMM test cases is left unclear. The Conformance requirement is left incorrect.

<b>Clauses affected:</b>	⌘ 12									
<b>Other specs affected:</b>	<table border="1"> <tr> <td><b>Y</b></td> <td><b>N</b></td> </tr> <tr> <td></td> <td><b>X</b></td> </tr> <tr> <td></td> <td><b>X</b></td> </tr> <tr> <td></td> <td><b>X</b></td> </tr> </table>	<b>Y</b>	<b>N</b>		<b>X</b>		<b>X</b>		<b>X</b>	Other core specifications ⌘ Test specifications O&M Specifications
	<b>Y</b>	<b>N</b>								
		<b>X</b>								
	<b>X</b>									
	<b>X</b>									
<b>Other comments:</b>	⌘									

**How to create CRs using this form:**

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## 12 Elementary procedure for Packet Switched Mobility Management

### 12.1 Applicability, default conditions and default messages

All test cases for PS mobility management apply for all PS mobiles unless otherwise stated in a specific test. Within each test case, the ICS statement indicates whether the test shall be performed for mobiles that can only operate in mode - class A, only in mode - class C, or in both mode - class A and C. For some procedures, the mobile class is of no importance.

Note that only the layer 3 messages are described in the document. The mapping of the layer 3 messages to lower layers and the use of logical channels is not described in the present document.

The terms 'PS/CS mode of operation' and 'PS mode of operation' are not used in the present document with some exceptions. Instead the terms 'UE operation mode A' and 'UE operation mode C' are used.

The default conditions and default message contents not specified in this clause must be set as in "PS default conditions"

Below is a list of the RAI values and the corresponding RAC, LAC and MCC used in the test cases:

RAI-1: MCC1/MNC1/LAC1/RAC1 (Used if only one cell)

RAI-2: MCC2/MNC1/LAC1/RAC1

RAI-3: MCC1/MNC1/LAC2/RAC1

RAI-4: MCC1/MNC1/LAC1/RAC2

RAI-5: MCC1/MNC1/LAC1/RAC3

RAI-6: MCC2/MNC1/LAC2/RAC1

RAI-7: MCC2/MNC1/LAC1/RAC2

RAI-8: MCC1/MNC2/LAC1/RAC1

RAI-9: MCC1/MNC2/LAC2/RAC1

RAI10: MCC1/MNC2/LAC1/RAC2

RAI-11: MCC1/MNC3/LAC1/RAC1

RAI-12: MCC1/MNC1/LAC2/RAC2

If the User Equipment initial condition specifies that the mobile has a valid IMSI but the initial condition does not mention P-TMSI, then that shall be interpreted as that the mobile has no valid P-TMSI.

The tests are based on 3GPP TS 24.008.

### 12.2 PS attach procedure

This procedure is used to indicate for the network that the IMSI is available for traffic by establishment of a GMM context.

#### 12.2.1 Normal PS attach

The normal PS attach procedure is a GMM procedure used by PS UEs of UE operation mode A or C to IMSI attach for PS services only.

## 12.2.1.1 PS attach / accepted

### 12.2.1.1.1 Definition

### 12.2.1.1.2 Conformance requirement

- 1) If the network accepts the PS attach procedure (signalled by an IMSI) and allocates a P-TMSI, the UE shall acknowledge the P-TMSI and continue communication with the P-TMSI.
- 2) If the network accepts the PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.
- 3) If the network accepts the PS attach procedure (signalled by a P-TMSI) from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.

### Reference

3GPP TS 24.008 clause 4.7.3.1

### 12.2.1.1.3 Test purpose

To test the behaviour of the UE if the network accepts the PS attach procedure.

The following cases are identified:

- 1) P-TMSI / P-TMSI signature is allocated;
- 2) P-TMSI / P-TMSI signature is reallocated;
- 3) Old P-TMSI / P-TMSI signature is not changed.

### 12.2.1.1.4 Method of test

#### Initial condition

#### System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

#### User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

- 1) The UE sends an ATTACH REQUEST message with identity IMSI. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. The UE acknowledges the P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI.



- 2) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS reallocates a new P-TMSI and returns ATTACH ACCEPT message with the new P-TMSI. The UE acknowledges the P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. The UE will not answer signalling addressed to the old P-TMSI.
- 3) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS accepts the P-TMSI and returns ATTACH ACCEPT message without any P-TMSI. Further communication UE - SS is performed by the old P-TMSI.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to the PS services only (see ICS). If this is not supported by the UE, goto step 26.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services. Paging cause: Terminating interactive call
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
7	->		SERVICE REQUEST	Service type = "paging response"
7a	SS			The SS starts integrity protection and releases the RRC connection.
8	UE			The UE is switched off or power is removed (see ICS).
8a	SS			SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
9	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
9a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
10	UE			The UE is powered up or switched on and initiates an attach (see ICS).
10a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-2 Routing area identity = RAI-1
11a	<-		AUTHENTICATION AND CIPHERING REQUEST	
11b	->		AUTHENTICATION AND CIPHERING RESPONSE	
11c	SS			The SS starts integrity protection.
12	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
13	->		ATTACH COMPLETE	
14			Void	
14b			Void	

Step	Direction		Message	Comments
	UE	SS		
14c	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
14d		SS		SS verifies that the UE transmits an RRC CONNECTION REQUEST message. SS will reject this request. The IE "Establishment cause" is not checked.
15	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
16	UE			No response from the UE to the request. This is checked for 10 seconds.
17	UE			The UE is switched off or power is removed (see ICS).
17a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
18			DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
18a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
19	UE			The UE is powered up or switched on and initiates an attach (see ICS).
19a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20			ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
20a	<-		AUTHENTICATION AND CIPHERING REQUEST	
20b			AUTHENTICATION AND CIPHERING RESPONSE	
20c		SS		The SS starts integrity protection.
21	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
22	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
22a		SS		Paging cause: Terminating interactive call SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
22b			Void	
22c			Void	
23			SERVICE REQUEST	Service type = "paging response"
23aa		SS		The SS starts integrity protection and releases the RRC connection.
23a			Void	
23b			Void	
24	UE			The UE is switched off or power is removed (see ICS).
24a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
25			DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
25a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Step	Direction		Message	Comments
	UE	SS		
26	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 25a.

### Specific message contents

None.

#### 12.2.1.1.5 Test requirements

At step 2a, 10a and 19a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a and 22a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Terminating Interactive Call".

At step 8a, 17a and 24a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, 11 and 20, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the Mobile identity in the ATTACH REQUEST message and on the Mobile identity in the ATTACH ACCEPT message.

Case 1) The Mobile identity in the ATTACH REQUEST message is the IMSI and the Mobile identity in the ATTACH ACCEPT message is the P-TMSI.

At step5, UE shall:

- acknowledge the P-TMSI by sending the ATTACH COMPLETE message.

Case 2) The Mobile identity in the ATTACH REQUEST message is the P-TMSI and the Mobile identity in the ATTACH ACCEPT message is the new P-TMSI.

At step13, UE shall:

- acknowledge the new P-TMSI by sending the ATTACH COMPLETE message.

At step23, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

#### 12.2.1.2 PS attach / rejected / IMSI invalid / illegal UE

##### 12.2.1.2.1 Definition

##### 12.2.1.2.2 Conformance requirement

- 1) If the network rejects a PS attach procedure from the User Equipment with the cause 'Illegal MS', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.
- 2) If the network rejects a PS attach procedure from the User Equipment with the cause 'Illegal MS' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.
- 3) If the network rejects a PS attach procedure from the User Equipment with the cause 'Illegal MS', the User Equipment shall delete the LAI.

## Reference

3GPP TS 24.008 clause 4.7.3.1.

## 12.2.1.2.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'illegal MS'.

## 12.2.1.2.4 Method of test

## Initial condition

## System Simulator:

Three cells (not simultaneously activated), cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).

All three cells are operating in network operation mode II (in case of UE operation mode A).

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.](#)

## User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The SS rejects a PS attach with the cause value 'Illegal UE'. The SS checks that the UE does not perform PS attach in the same or another PLMN.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following messages are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	<del>UE</del>		<del>Registration on CS</del> <a href="#">Void</a>	<del>See TS 34.108</del> <del>This is applied only for UE in UE operation mode A.</del>
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
5	<-		ATTACH REJECT	GMM cause = 'Illegal MS'.
6	SS			The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
9	UE			The UE initiates an attach by MMI or by AT command.
10	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
11	SS			The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
12	UE			Cell C is preferred by the UE.
13	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
14	UE			The UE initiates an attach by MMI or by AT command.
15	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
16	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.
17	UE			The UE is powered up or switched on.
18	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
19	UE			The UE initiates an attach (see ICS).
20	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
20a	<-		AUTHENTICATION AND CIPHERING REQUEST	
20b	->		AUTHENTICATION AND CIPHERING RESPONSE	
20c	SS			The SS starts integrity protection.

21	<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
22	->	ATTACH COMPLETE	The UE is switched off or power is removed (see ICS). Message not sent if power is removed. Detach type = 'power switched off, PS detach'
23	UE		
24	->	DETACH REQUEST	
25	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.2.1.2.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, 10, 13 and 15, UE shall:

- not send the ATTACH REQUEST message to SS, even if there is an instruction of attach request from MMI or from AT command.

At step20, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

#### 12.2.1.3 PS attach / rejected / IMSI invalid / PS services not allowed

##### 12.2.1.3.1 Definition

##### 12.2.1.3.2 Conformance requirement

- 1) If the network rejects a PS attach procedure from the User Equipment with the cause 'PS services not allowed', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.
- 2) If the network rejects a PS attach procedure from the User Equipment with the cause 'PS services not allowed' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

### Reference

3GPP TS 24.008 clause 4.7.3.1.

##### 12.2.1.3.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'PS services not allowed' (no valid PS-subscription for the IMSI).

## 12.2.1.3.4 Method of test

## Initial condition

## System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (HPLMN, RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).

Both cells are operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.](#)

## User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The SS rejects a normal attach with the cause value 'PS services not allowed'. The SS checks that the UE does not perform PS attach in another PLMN.



## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 17.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
5		<-	ATTACH REJECT	GMM cause = 'PS services not allowed'
5a		SS		The SS releases the RRC connection.
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
9	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
10	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
10a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
11a		<-	AUTHENTICATION AND CIPHERING REQUEST	
11b		->	AUTHENTICATION AND CIPHERING RESPONSE	
11c		SS		The SS starts integrity protection.
12		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
13		->	ATTACH COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15		->	DETACH REQUEST	Message not sent if power is removed.
15a		SS		Detach type = 'power switched off, PS detach' The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
16				Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)

17	UE		
			The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 15.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.2.1.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step8, UE shall:

- not perform a PS attach procedure.

At step11, after the UE is switched on or a USIM is replaced, UE shall:

- perform the PS attach procedure.

#### 12.2.1.4 PS attach / rejected / PLMN not allowed

##### 12.2.1.4.1 Definition

##### 12.2.1.4.2 Conformance requirement

- 1) If the network rejects a PS attach procedure from the User Equipment with the cause 'PLMN not allowed' the User Equipment shall:
  - 1.1 not perform PS attach when switched on in the same routing area or location area (except for the HPLMN).
  - 1.2 not perform PS attach when in the same PLMN and when that PLMN is not selected manually.
  - 1.3 delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.
  - 1.4 store the PLMN in the 'forbidden PLMN' list.
- 2) If the network rejects a PS attach procedure from the User Equipment with the cause 'PLMN not allowed' the User Equipment shall perform PS attach when a new PLMN is entered.
- 3) If the network rejects a PS attach procedure from the User Equipment with the cause 'PLMN not allowed' and if after that the PLMN from which this rejection was received, is manually selected, the User Equipment shall perform a PS attach procedure.

### Reference

3GPP TS 24.008 clause 4.7.3.1.

##### 12.2.1.4.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'PLMN not allowed'.

12.2.1.4.4 Method of test

12.2.1.4.4.1 Test procedure 1

Initial condition

System Simulator:

Four cells (not simultaneously activated), cell A in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell B in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell C in MCC1/MNC2/LAC2/RAC1 (RAI-9) and cell D in MCC2/MNC1/LAC1/RAC1 (RAI-2).

All four cells are operating in network operation mode II (in case of UE operation mode A). The PLMN of the four cells should NOT be that of the UE Home PLMN.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.](#)

User Equipment:

The UE has a valid P-TMSI-1 and RAI-8. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'PLMN not allowed'. The SS checks that the UE does not perform PS attach if activated in the same routing area or location area and performs PS attach only when a new PLMN is entered.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
2	UE			The UE is set in UE operation mode C (see ICS).
3		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Non-Suitable cell". (see note)
3a	UE		Registration on CS Void	The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE. <del>See TS 34.108</del> <del>This is applied only for UE in UE operation mode A.</del>
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-8
5		<-	ATTACH REJECT	GMM cause = 'PLMN not allowed'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
7		UE		The following messages are sent and shall be received on cell B.
8		SS		The UE is switched off. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
9	UE			The UE is powered up or switched on.
10	UE			Cell B is preferred by the UE.
11	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
12		SS		The following messages are sent and shall be received on cell C.
13	UE			Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
14	UE			Cell C is preferred by the UE. No ATTACH REQUEST sent to SS (SS waits 30 seconds).
15		SS		The following messages are sent and shall be received on cell D.
16	UE			Set the cell type of cell C to the "Non-Suitable cell".
17	UE		Registration on CS	Set the cell type of cell D to the "Serving cell". (see note) Cell D is preferred by the UE. See TS 34.108 This is applied only for UE in UE operation mode A.
18	UE			The UE initiates an attach automatically, by MMI or by AT command.
19		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
19a		<-	AUTHENTICATION AND CIPHERING REQUEST	
19b		->	AUTHENTICATION AND CIPHERING RESPONSE	
19c		SS		The SS starts integrity protection.

20	<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
21	->	ATTACH COMPLETE	The UE is switched off or power is removed (see ICS).
22	UE		
23	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
24	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

#### 12.2.1.4.4.2 Test procedure 2

##### Initial condition

##### System Simulator:

One cell operating in network operation mode II: MCC2/MNC1/LAC1/RAC1 (RAI-2). The PLMN of the cell should NOT be that of the Mobile Station Home PLMN.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

##### User Equipment:

The UE has a valid P-TMSI-1 and RAI-2. UE is Idle Updated on cell A.

##### Related ICS/IXIT statements

Support of PS service Yes/No  
 UE operation mode C Yes/No  
 UE operation mode A Yes/No (only if mode C not supported)  
 Switch off on button Yes/No  
 Automatic PS attach procedure at switch on or power on Yes/No

##### Test procedure

The SS rejects a PS attach with the cause value 'PLMN not allowed'. The subscribers access rights is changed to allow PS attach. Then the PLMN from which this rejection was received is manually selected and the SS check that a PS attach is performed.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C or A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	<del>UE</del>		<del>Registration-on-CSVoid</del>	<del>See TS 34.108 This is applied only for UE in UE operation mode A.</del>
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-2
4	<-		ATTACH REJECT	GMM cause = 'PLMN not allowed'
5	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
6	UE			The current PLMN is selected manually.
7	<del>UE</del>		<del>Registration-on-CSVoid</del>	<del>See TS 34.108 This is applied only for UE in UE operation mode A.</del>
8	UE			The UE initiates an attach automatically, by MMI or by AT command.
9	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
9a	<-		AUTHENTICATION AND CIPHERING REQUEST	
9b	->		AUTHENTICATION AND CIPHERING RESPONSE	
9c	SS			The SS starts integrity protection.
10	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
11	->		ATTACH COMPLETE	
12	UE			The UE is switched off or power is removed (see ICS).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
14	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

## Specific message contents

None.

## 12.2.1.4.5 Test requirements

## Test requirements for test procedure 1

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, UE shall:

- not perform PS attach procedure.

UE shall perform the following actions depending on the PLMN or the routing area or the location area

Case 1) UE is in the same routing area or location area when the power is switched on,

At step11, UE shall:

- not perform PS attach procedure.

Case2) UE is in the same PLMN, and this PLMN is not selected manually

At step14, UE shall:

- not perform PS attach procedure.

Case3) UE is in a new PLMN.

At step19, UE shall:

- perform the PS attach procedure.

#### Test requirements for test procedure 2

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step5, UE shall:

- not perform PS attach procedure.

At step9, when the UE is in the new PLMN, and this PLMN is selected manually, UE shall

- perform the PS attach procedure.

### 12.2.1.5a PS attach / rejected / roaming not allowed in this location area

#### 12.2.1.5a.1 Definition

#### 12.2.1.5a.2 Conformance requirement

- 1) If the network rejects a PS attach procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment shall:
  - 1.1 not perform PS attach when in the same location area.
  - 1.2 delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.
  - 1.3 store the LA in the 'forbidden location areas for roaming' list.
  - 1.4 perform PS attach when a new location area is entered.
  - 1.5 Periodically search for its HPLMN.
- 2) The User Equipment shall reset the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.
- 3) The UE shall be capable of storing at least 10 entries in the list of 'Forbidden location areas for roaming'.

#### Reference

3GPP TS 24.008 clause 4.7.3.1.

#### 12.2.1.5a.3 Test purpose

##### Test purpose 1

To test that on receipt of a rejection using the 'roaming not allowed in this location area' cause code, the UE ceases trying to attach on that location area. Successful PS attach procedure is possible in other location areas.

### Test purpose 2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

### Test purpose 3

To test that at least 6 entries can be held in the list of 'forbidden location areas for roaming' (the requirement in 3GPP TS 24.008 is to store at least 10 entries. This is not fully tested by the third procedure).

### Test purpose 4

To test that if a cell of the Home PLMN is available then the UE returns to it in preference to any other available cell.

#### 12.2.1.5a.4 Method of test

##### 12.2.1.5a.4.1 Test procedure 1

#### Initial condition

##### System Simulator:

Three cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in

MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN) and cell C in MCC2/MNC1/LAC1/RAC2 (RAI-7, Not HPLMN).

All three cells are operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.](#)

##### User Equipment:

The UE has a valid P-TMSI-1 and RAI-2.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this area'. A new attempt for a PS attach is not possible. Successful PS attach / detach procedures are performed in another location area. A new attempt for a PS attach is performed in the 1<sup>st</sup> location area. This attempt shall not succeed, as the LA is on the forbidden list.



Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 19.
2		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	<del>UE</del>		<del>Registration on CS</del> <a href="#">Void</a>	<del>See TS 34.108</del> <del>This is applied only for UE in UE operation mode A.</del>
3b		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-2
5		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
6a		SS		The SS releases the RRC connection.
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
9	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
10	UE			Parameter mobile identity is IMSI. The UE initiates an attach automatically, by MMI or by AT command.
10a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
11a		<-	AUTHENTICATION AND CIPHERING REQUEST	
11b		->	AUTHENTICATION AND CIPHERING RESPONSE	
11c		SS		The SS starts integrity protection.
12		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6
13		->	ATTACH COMPLETE	
13a		SS		The SS releases the RRC connection.
14	UE			The UE initiates a PS detach (without power off) by MMI or by AT command .
14a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
15		->	DETACH REQUEST	Detach type = 'normal detach, PS detach'
16		<-	DETACH ACCEPT	

16a	SS		The SS releases the RRC connection.
17	SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
18	UE		Cell C is preferred by the UE.
19	UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds). The UE is switched off or power is removed (see ICS)
20	UE		UE is switched off.
21	SS		Set the cell type of cell C to the "Non-Suitable cell". (see note)
22	UE		The UE is set in UE operation mode A if supported (see ICS) and the test is repeated from step 2 to step 20.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

#### 12.2.1.5a.4.2 Test procedure 2

##### Initial condition

##### System Simulator:

One cell in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN) operating in network operation mode II.  
[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

##### User Equipment:

The UE has a valid P-TMSI-1 and RAI-2.

##### Related ICS/IXIT statements

Support of PS service Yes/No  
 UE operation mode C Yes/No  
 UE operation mode A Yes/No (only if mode C not supported)  
 Switch off on button Yes/No  
 Automatic PS attach procedure at switch on or power on Yes/No

##### Test procedure

The SS rejects a PS attach updating with the cause value 'Roaming not allowed in this area'. The UE is switched off for 10 s and switched on again. The SS check that a PS attach is possible on the cell on which the PS attach had been rejected.

If USIM removal is possible without switching off: The SS rejects a PS attach with the cause value 'Roaming not allowed in this area'. The USIM is removed and inserted in the UE. The SS check that a PS attach is possible on the cell on which the PS attach had been rejected.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			If UE operation mode C is supported, the UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, the UE is set in UE operation mode A.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	<del>UE</del>		<del>Registration on CS</del> <a href="#">Void</a>	<del>See TS 34.108 This is applied only for UE in UE operation mode A.</del>
2b		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-2
4		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
5	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
5a		SS		The SS releases the RRC connection.
6	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.
7	UE			The UE is powered up or switched on and initiates an attach (see ICS).
8	<del>UE</del>		<del>Registration on CS</del>	<del>See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI</del>
8a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
9		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
9a		<-	AUTHENTICATION AND CIPHERING REQUEST	
9b		->	AUTHENTICATION AND CIPHERING RESPONSE	
9c		SS		The SS starts integrity protection.
10		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
11		->	ATTACH COMPLETE	
11a		SS		The SS releases the RRC connection.
12	UE			The UE is switched off or power is removed (see ICS).
12a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
12b	<del>UE</del>		<del>Detach on CS</del> <a href="#">Void</a>	<del>This is applied only for UE in UE operation mode A.</del>
13		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
14		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

## 12.2.1.5a.4.3 Test procedure 3

## Initial condition

## System Simulator:

Six cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-3, Not HPLMN), cell C in MCC2/MNC1/LAC3/RAC1 (Not HPLMN), cell D in MCC2/MNC1/LAC4/RAC1 (Not HPLMN), cell E in MCC2/MNC1/LAC5/RAC1 (Not HPLMN), cell F in MCC2/MNC1/LAC6/RAC1 (Not HPLMN).

All six cells are operating in network operation mode II (in case of UE operation mode A).

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.](#)

## User Equipment:

The UE has a valid P-TMSI-1 and RAI-2.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this area'. This is done for 6 different location areas. Then the SS checks that the UE does not attempt to perform an attach procedure on the non-allowed location areas.

Different types of UE may use different methods to periodically clear the list of forbidden areas (e.g. every day at 12am) for roaming. If the list is cleared while the test is being run, it may be necessary to re-run the test.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Non-Suitable cell". Set the cell type of cell E to the "Non-Suitable cell". Set the cell type of cell F to the "Non-Suitable cell". (see note)
2		UE		If UE operation mode C is supported, the UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, the UE is set in UE operation mode A.
3		UE		The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a		UE	<del>Registration on CS</del> Void	<del>See TS 34.108</del> <del>This is applied only in case of UE operation mode A.</del>
3b		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-2
5		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
6		UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds)
6a		SS		The SS releases the RRC connection.
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8		UE		Cell B is preferred by the UE.
9		UE	Registration on CS	See TS 34.108 This is applied only in case of UE operation mode A. Parameter mobile identity is IMSI.
10		UE		The UE initiates an attach automatically, by MMI or by AT command.
10a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
12		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
13		UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell C.

Step	Direction		Message	Comments
	UE	SS		
14		SS		Set the cell type of cell B to the "Non-Suitable cell".
15	UE			Set the cell type of cell C to the "Serving cell". (see note)
16	UE		Registration on CS	Cell C is preferred by the UE. See TS 34.108 This is applied only for UE in UE operation mode A.
17	UE			Parameter mobile identity is IMSI. The UE initiates an attach automatically, by MMI or by AT command.
17a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
18		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
19		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
20		UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell D.
21a		SS		The SS releases the RRC connection.
21		SS		Set the cell type of cell C to the "Non-Suitable cell".
22	UE			Set the cell type of cell D to the "Serving cell". (see note)
23	UE		Registration on CS	Cell D is preferred by the UE. See TS 34.108 This is applied only for UE in UE operation mode A.
24	UE			Parameter mobile identity is IMSI. The UE initiates an attach automatically, by MMI or by AT command.
24a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
25		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
26		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
27		UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds).
27a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
28		SS		The following messages are sent and shall be received on cell E. Set the cell type of cell D to the "Non-Suitable cell".
29	UE			Set the cell type of cell E to the "Serving cell". (see note)
30	UE		Registration on CS	Cell E is preferred by the UE. See TS 34.108 This is applied only for UE in UE operation mode A.
31	UE			Parameter mobile identity is IMSI. The UE initiates an attach automatically, by MMI or by AT command.
31a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
32		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
33		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'

Step	Direction		Message	Comments
	UE	SS		
34	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
34a	SS			The SS releases the RRC connection.
35	SS			The following messages are sent and shall be received on cell F. Set the cell type of cell E to the "Non-Suitable cell". Set the cell type of cell F to the "Serving cell". (see note)
36	UE		Registration on CS	Cell F is preferred by the UE.
37	UE			See TS 34.108 This is applied only for UE in UE operation mode A.
38	UE			The UE initiates an attach automatically, by MMI or by AT command.
38a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
39	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
40	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
41	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
41a	SS			The SS releases the RRC connection.
42	SS			The following messages are sent and shall be received on cell E. Set the cell type of cell E to the "Serving cell". Set the cell type of cell F to the "Non-Suitable cell". (see note)
43	SS			Cell E is preferred by the UE.
44	UE			The UE initiates an attach automatically, by MMI or by AT command.
45	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
46	SS			The following messages are sent and shall be received on cell C. Set the cell type of cell C to the "Serving cell". Set the cell type of cell E to the "Non-Suitable cell". (see note)
47	SS			Cell C is preferred by the UE.
48	UE			The UE initiates an attach automatically, by MMI or by AT command.
49	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
50	SS			The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
51	SS			Cell A will be preferred by the UE.
52	UE			The UE initiates an attach automatically, by MMI or by AT command.
53	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

## 12.2.1.5a.4.4 Test procedure4

## Initial condition

## System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (not HPLMN, RAI-2) and cell B in MCC1/MNC1/LAC1/RAC1 (HPLMN, RAI-1).

Both cells are operating in network operation mode II (in case of UE operation mode A).

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.](#)

## User Equipment:

The UE has a valid P-TMSI-1 and RAI-2.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this area A second cell belonging to the HPLMN is activated. It is checked that the UE returns to its HPLMN.



## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	SS			The following messages are sent and shall be received on cell A.
2	UE			If UE operation mode C is supported, the UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, the UE is set in UE operation mode A.
3	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
3a	UE		<del>Registration on CS</del> <u>Void</u>	<del>See TS 34.108</del> <del>This is applied only in case of UE operation mode A.</del>
3b	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-2
5	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
6a	SS			The SS releases the RRC connection.
7	SS			The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
9	UE			The UE initiates an attach automatically, by MMI or by AT command.
9a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
10	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
10a	<-		AUTHENTICATION AND CIPHERING REQUEST	
10b	->		AUTHENTICATION AND CIPHERING RESPONSE	
10c	SS			The SS starts integrity protection.
11	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
12	->		ATTACH COMPLETE	
12a	->			The SS releases the RRC connection.
13	UE			The UE is switched off or power is removed (see ICS).
13a	SS			SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
13b	UE		<del>Detach on CS</del> <u>Void</u>	<del>This is applied only for UE in UE operation mode A.</del>

14	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach' The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
15	SS		
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.2.1.5a.5 Test requirements

##### Test requirements for Test procedure1

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this area', UE shall:

- not perform the PS attach procedure.

At step11, when the new location area is entered, UE shall:

- perform the PS attach procedure

At step19, when the rejected location area is entered, UE shall

- not perform PS attach procedure.

##### Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step5, after the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this area', UE shall:

- not perform PS attach procedure.

At step9, when the UE is switched off or USIM is replaced, UE shall:

- perform the PS attach procedure.

##### Test requirements for Test procedure3

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, 13, 20, 27, 34 and 41, after the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this area', UE shall:

- not perform PS attach procedure.

At step11, 18, 25, 32 and 39 , UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step45, 49 and 53, UE shall:

- not perform PS attach procedure.

#### Test requirements for Test procedure4

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this area', UE shall:

- not perform PS attach procedure.

At step10, when a new location area is entered, UE shall:

- perform the PS attach procedure.

### 12.2.1.5b PS attach / rejected / No Suitable Cells In Location Area

#### 12.2.1.5b.1 Definition

#### 12.2.1.5b.2 Conformance requirement

- (1) If the network rejects a PS attach procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

- 1.1 not perform PS attach when in the same location area.
- 1.2 delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.
- 1.3 store the LA in the 'forbidden location areas for roaming' list.
- 1.4 not delete the list of "equivalent PLMNs".
- 1.5 perform PS attach when a new location area is entered.

#### Reference

3GPP TS 24.008 clauses 4.7.3.1.

#### 12.2.1.5b.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'No Suitable Cells In Location Area'.

#### 12.2.1.5b.4 Method of test

#### Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6)

All three cells are operating in network operation mode II.

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

#### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS rejects a PS attach with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall search for a suitable cell in a different location area on the equivalent PLMN and shall perform PS attach procedure in that cell.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A (see ICS).
2		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-suitable cell". Set the cell type of cell C to the "Non-suitable cell". (see note)
3	UE		<del>Registration on CS</del> Void	<del>See TS 34.108</del> <del>This is applied only for UE in UE operation mode A.</del>
3a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
6		<-	DETACH REQUEST	Detach type = re-attach required
7		->	DETACH ACCEPT	
8		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
9			Void	
10		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
11		<-	ATTACH REJECT	GMM cause = 'No Suitable Cells In Location Area'
12		SS		The SS initiates the RRC connection release. The following message are sent and shall be received on cell C.
13	UE		Registration on CS	See TS 34.108
14	UE			The UE initiates an attach automatically, by MMI or by AT command.
14a				SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
15		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
16		<-	AUTHENTICATION AND CIPHERING REQUEST	
17		->	AUTHENTICATION AND CIPHERING RESPONSE	
18		SS		The SS starts integrity protection.
19		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6

20	->	ATTACH COMPLETE	The SS releases the RRC connection. The UE is switched off or power is removed (see ICS).
20a	SS		
21	UE		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
21a	SS		Message not sent if power is removed. Detach type = 'power switched off, PS detach'
22	->	DETACH REQUEST	The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
23	SS		
NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.2.1.5b.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step15, when the UE enters a suitable cell in a different location area on the equivalent PLMN, UE shall:

- perform the PS attach procedure.

#### 12.2.1.5c PS attach / rejected / Location area not allowed

##### 12.2.1.5c.1 Definition

##### 12.2.1.5c.2 Conformance requirement

- 1) If the network rejects a PS attach procedure from the User Equipment with the cause 'Location area not allowed' the User Equipment shall:
  - 1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.
  - 1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.
  - 1.3 reset the attach attempt counter.
  - 1.4 store the LAI in the list of "forbidden location areas for regional provision of service".
- 1.1 perform a cell selection.
- 1.2 not delete the list of "equivalent PLMNs".
- 2) If the network rejects a PS attach procedure from the User Equipment with the cause 'Location area not allowed' and if the User Equipment is IMSI attached via MM procedures the User Equipment shall:
  - 2.1 set the update status to U3 ROAMING NOT ALLOWED.
  - 2.2 delete any TMSI, LAI and ciphering key sequence number.
  - 2.3 reset the location update attempt counter.

### Reference

3GPP TS 24.008 clause 4.7.3.1.

### 12.2.1.5c.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'Location area not allowed'.

### 12.2.1.5c.4 Method of test

#### Initial condition

#### System Simulator:

Three cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).

All three cells are operating in network operation mode II (in case of UE operation mode A).

The PLMN that contains Cell C is equivalent to the PLMN that contains Cell A.

#### User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS rejects a PS attach with the cause value 'Location area not allowed'. The SS checks that the UE does not perform MM IMSI attach while in the same location area and performs PS attach when a new equivalent PLMN is entered.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
2	UE			If UE operation mode A is supported, If UE operation mode C is supported, the UE is set in UE operation mode A (see ICS). If UE operation mode A is not supported, the UE is set in UE operation mode C.
3		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Non-suitable cell ". Set the cell type of cell C to the " Non-suitable cell " (see note)
3a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
4		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4a	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1
4b	->		AUTHENTICATION AND CIPHERING REQUEST	
4c	<-		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection
5	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
6	<-		DETACH REQUEST	Detach type = re-attach required
7	->		DETACH ACCEPT	
8		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell ". Set the cell type of cell C to the " Suitable neighbour cell " (see note) The SS configures power level of each Cell as follows. Cell A > Cell B > Cell C
9			Void	
10	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1
11	<-		ATTACH REJECT	GMM cause = 'Location area not allowed'
11a		SS		The SS releases the RRC connection.
12		UE		The UE performs cell selection.
12a		UE	Registration on CS	The following messages are sent and shall be received on cell C. See TS 34.108. This is applied only for UE in UE operation mode A.
12b		UE		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Registration"
13	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
14	<-		AUTHENTICATION AND CIPHERING REQUEST	
15	->		AUTHENTICATION AND CIPHERING RESPONSE	



16	SS		ATTACH ACCEPT	The SS starts integrity protection. Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-6
17	<-			
18	->		ATTACH COMPLETE	No MM IMSI attach request sent to SS (SS waits 30 seconds).
19	UE			
19a	SS			The SS releases the RRC connection.
20	UE			The UE is switched off or power is removed (see ICS).
20a	SS		Detach on CS	SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach". This is applied only for UE in UE operation mode A. Message not sent if power is removed. Detach type = 'power switched off, PS detach' The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
20b	UE			
21	->			
22	SS			
NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.2.1.5c.5 Test requirements

At step4 and 10, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step12, UE shall:

- perform cell selection.

At step13, UE shall:

- perform PS attach procedure with Mobile identity = IMSI.

At step19, UE shall:

- not perform MM IMSI attach

#### 12.2.1.5d PS attach / rejected / PS services not allowed in this PLMN

##### 12.2.1.5d.1 Definition

##### 12.2.1.5d.2 Conformance requirement

- 1) If the network rejects a PS attach procedure from the User Equipment with the cause 'GPRS services not allowed in this PLMN' the User Equipment shall:
  - 1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.
  - 1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.
  - 1.3 store the PLMN identity in the "forbidden PLMNs for PS service" list.
  - 1.4 perform a PLMN selection instead of a cell selection, if the UE is in UE operation mode C.

2) If the UE is in UE operation mode A or B and the network is in network operation mode II the User Equipment shall:

2.1 be still IMSI attached for CS services in the network..

#### Reference

3GPP TS 24.008 clause 4.7.3.1.

#### 12.2.1.5d.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'PS service not allowed in this PLMN'.

#### 12.2.1.5d.4 Method of test

#### Initial condition

##### System Simulator:

Three cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC2 (RAI-7).

All three cells are operating in network operation mode II (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

##### User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS rejects a PS attach with the cause value 'PS service not allowed in this PLMN'. The SS checks that the UE performs PS attach with attach type = PS attach when a new equivalent PLMN is entered.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
2	UE			The UE is set in UE operation mode A (see ICS).
3		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Non-suitable cell ". Set the cell type of cell C to the " Non-suitable cell " (see note)
4	UE		Registration on CS	The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
5	->		ATTACH REQUEST	See TS 34.108 This is applied only for UE in UE operation mode A. Mobile identity = TMSI-1 Attach type = 'PS attach'
5a	<-		AUTHENTICATION AND CIPHERING REQUEST	Mobile identity = P-TMSI-1
5b	->		AUTHENTICATION AND CIPHERING RESPONSE	
5c		SS		The SS starts integrity protection.
6	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
7	<-		DETACH REQUEST	Detach type = re-attach required
8	->		DETACH ACCEPT	
9		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell ". Set the cell type of cell C to the " Suitable neighbour cell " (see note)
10	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1
11	<-		ATTACH REJECT	GMM cause = 'PS service not allowed in this PLMN'
12	UE			The UE performs PLMN selection. The following messages are sent and shall be received on cell C.
13	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
14	<-		AUTHENTICATION AND CIPHERING REQUEST	
15	->		AUTHENTICATION AND CIPHERING RESPONSE	
16		SS		The SS starts integrity protection.
17	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-7
18	->		ATTACH COMPLETE	
19	UE		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20		SS		No response from the UE to the request. This is checked for 10 seconds.
21	->		RRC CONNECTION REQUEST	
22	<-		RRC CONNECTION SETUP	

23	->	RRC CONNECTION SETUP COMPLETE	
24	->	PAGING RESPONSE	
25	<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
26	->	RRC CONNECTION RELEASE COMPLETE	
27	UE		The UE is switched off or power is removed (see ICS).
28	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
29	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.2.1.5d.5 Test requirements

At step5 and 10, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step12, UE shall:

- perform PLMN selection.

At step13, UE shall:

- perform PS attach procedure with Mobile identity = IMSI to the equivalent cell.

At step21, UE shall:

- respond the Paging for CS domain service.

### 12.2.1.6 PS attach / abnormal cases / access barred due to access class control

#### 12.2.1.6.1 Definition

#### 12.2.1.6.2 Conformance requirement

- 1) The UE shall not perform PS attach procedure, but stays in the current serving cell and applies normal cell reselection process.
- 2) The User Equipment shall perform the PS attach procedure when:
  - 2.1 Access is granted.
  - 2.2 Cell is changed.

### Reference

3GPP TS 24.008 clause 4.7.3.1.

## 12.2.1.6.3 Test purpose

## Test purpose1

To test the behaviour of the UE in case of access class control (access is granted).

## Test purpose2

To test the behaviour of the UE in case of access class control (Cell is changed).

## 12.2.1.6.4 Method of test

## 12.2.1.6.4.1 Test procedure1

## Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is initially indicated to be barred.

## System Simulator:

One cell operating in network operation mode II.

Access class x barred.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

## User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The SS indicates access class x barred. A PS attach procedure is not performed.

The SS indicates that access class x is not barred. A PS attach procedure is performed.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			<p>The USIM is programmed with access class x. The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 12.</p> <p>The UE is powered up or switched on and attempts to initiate an attach (see ICS). No ATTACH REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).</p> <p>The access class x is not barred anymore. The UE initiates a PS attach either automatically or manually (see ICS). Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1</p> <p>The SS starts integrity protection. Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1</p> <p>The UE is switched off or power is removed (see ICS). Message not sent if power is removed. Detach type = 'power switched off, PS detach' The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.</p> <p>The SS is set in network operation mode II. The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 11.</p>
2	UE			
3	UE			
4	UE			
5	SS			
6	UE			
7	->		ATTACH REQUEST	
7a	<-		AUTHENTICATION AND CIPHERING REQUEST	
7b	->		AUTHENTICATION AND CIPHERING RESPONSE	
7c	SS			
8	<-		ATTACH ACCEPT	
9	->		ATTACH COMPLETE	
10	UE			
11	->		DETACH REQUEST	
11a	SS			
12	SS			
13	UE			

## 12.2.1.6.4.2 Test procedure2

## Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is indicated to be barred on cell A.

## System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x barred, cell B in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x not barred.

Both cells are operating in network operation mode II (in case of UE operation mode A).

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.](#)

## User Equipment:

The UE has a valid P-TMSI-2 and RAI-1.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

### Test procedure

The SS indicates access class x barred. A PS attach procedure is not performed.

A cell change is performed into a cell where access class x is not barred. A PS attach procedure is performed.

### Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The USIM is programmed with access class x.
	SS			The following messages are sent and shall be received on cell A.
2		SS		The SS is set in network operation mode II.
				Set the cell type of cell A to the "Serving cell".
				Set the cell type of cell B to the "Suitable neighbour cell".
				(see note)
3	UE			The UE is set in UE operation mode C (see ICS).
4	UE			The UE is powered up or switched on and attempts to initiate an attach (see ICS).
5	UE			No ATTACH REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell".
				Set the cell type of cell B to the "Serving cell".
				(see note)
7	UE			The UE initiates an attach either automatically or manually (see ICS).
8	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-2 Routing area identity = RAI-1
8a	<-		AUTHENTICATION AND CIPHERING REQUEST	
8b	->		AUTHENTICATION AND CIPHERING RESPONSE	
8c	SS			The SS starts integrity protection.
9	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
10	->		ATTACH COMPLETE	
11	UE			The UE is switched off or power is removed (see ICS).
12	->		DETACH REQUEST	Message not sent if power is removed.
				Detach type = 'power switched off, PS detach'
13	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

#### 12.2.1.6.5 Test requirements

Test requirements for Test procedure1

At step4, when the UE access class x is barred, UE shall:

- not perform a PS attach procedure.

At step7, when the UE access class x is granted, UE shall:

initiate the PS attach procedure.

Test requirements for Test procedure2

At step5, when the UE access class x is barred, UE shall:

- not perform a PS attach procedure.

At step8, when the serving cell is changed, UE shall:

- initiate the PS attach procedure.

### 12.2.1.7 PS attach / abnormal cases / change of routing area

#### 12.2.1.7.1 Definition

#### 12.2.1.7.2 Conformance requirement

When a change of routing area is performed before ATTACH ACCEPT message is received by the UE, the UE shall abort the PS attach procedure and re-initiate it immediately.

#### Reference

3GPP TS 24.008 clause 4.7.3.1.

#### 12.2.1.7.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

#### 12.2.1.7.4 Method of test

#### Initial condition

System Simulator:

One cell with MCC1/MNC1/LAC1/RAC1 (RAI-1)

The cell is operating in network operation mode II (in case of UE operation mode A).

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

#### Related ICS/IXIT statements

Support of PS service Yes/No



UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

### Test procedure

The UE initiates a PS attach procedure. The ATTACH ACCEPT message is delayed from the SS. The UE receive a new routing area code. The UE shall re-initiate a PS attach procedure in the new routing area.

### Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1 2 3 3a 4 5		SS		The following messages are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS). The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". (see note) The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE. SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1 No response to the ATTACH REQUEST message is given by the SS.
		UE		
		SS		
		UE		
		SS		
4	->		ATTACH REQUEST	
5	SS			
6 6a	<-		Void UTRAN MOBILITY INFORMATION	The SS conveys updated CN system information for the PS domain to the UE in connected mode, including a new routing area code.
6b	->		UTRAN MOBILITY INFORMATION CONFIRM	
7	UE			The UE automatically re-initiates the attach.
8	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
8a	<-		AUTHENTICATION AND CIPHERING REQUEST	
8b	->		AUTHENTICATION AND CIPHERING RESPONSE	
8c	SS			The SS starts integrity protection.
9	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'PS only attached' Routing area identity = RAI-4
10	UE			The UE is switched off or power is removed (see ICS).
11	->		DETACH REQUEST	Message not sent if power is removed.
11a				Detach type = 'power switched off, PS detach' The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

#### UTRAN MOBILITY INFORMATION (step 6a)

The contents of the UTRAN MOBILITY INFORMATION message in this test case is identical to the default message in TS 34.108, with the following exceptions.

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode	Not Present
CN information info	
- PLMN identity	Not Present
- CN common GSM-MAP NAS system information	Not Present
- CN domain related information	
- CN domain identity	CS domain
- CN domain specific GSM-MAP NAS system info	
- T3212	30
- ATT	1
- CN domain specific DRX cycle length coefficient	7
- CN domain related information	
- CN domain identity	PS domain
- CN domain specific GSM-MAP NAS system info	
- RAC	RAC-2
- NMO	1 (Network Mode of Operation II)
- CN domain specific DRX cycle length coefficient	7

#### 12.2.1.7.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected sequence.

At step8, as the UE has received a new RAI in the UTRAN MOBILITY INFORMATION message before the ATTACH ACCEPT message or the ATTACH REJECT message is received by the UE, the UE shall:

- abort the PS attach procedure and re-initiate the PS attach procedure immediately with new information elements.

#### 12.2.1.8 PS attach / abnormal cases / power off

##### 12.2.1.8.1 Definition

##### 12.2.1.8.2 Conformance requirement

When power is switched off before ATTACH ACCEPT message is received by the UE, the UE shall abort the PS attach procedure and perform a PS detach procedure.

#### Reference

3GPP TS 24.008 clause 4.7.3.

##### 12.2.1.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

## 12.2.1.8.4 Method of test

## Initial condition

## System Simulator:

One cell operating in network operation mode II.

## User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

## Related ICS/IXIT statements

Support of PS service Yes/No  
 UE operation mode C Yes/No  
 UE operation mode A Yes/No  
 Switch off on button Yes/No  
 Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The UE is switched off after initiating an attach procedure. A PS detach is automatically performed by the UE before power is switched off.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 7.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4		SS		No response to the ATTACH REQUEST message is given by the SS.
5	UE			The UE is powered off and initiates a PS detach (with power off) by
6	->		DETACH REQUEST	Detach type = 'power switched off, PS detach'
7	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 2 to step 6.

## Specific message contents

None.

## 12.2.1.8.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when power is switched off before ATTACH ACCEPT message is received, UE shall:

- abort the PS attach procedure and perform the PS detach procedure.

## 12.2.1.9 PS attach / abnormal cases / PS detach procedure collision

### 12.2.1.9.1 Definition

### 12.2.1.9.2 Conformance requirement

- 1) When a DETACH REQUEST message is received by the UE (any cause except re-attach) while waiting for an ATTACH ACCEPT message, the UE shall terminate the PS attach procedure and continue with the PS detach procedure.
- 2) When a DETACH REQUEST message is received by the UE (cause re-attach) while waiting for an ATTACH ACCEPT message, the UE shall ignore the PS detach procedure and continue with the PS attach procedure.

### Reference

3GPP TS 24.008 clause 4.7.3.1.

### 12.2.1.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

### 12.2.1.9.4 Method of test

#### Initial condition

##### System Simulator:

One cell operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

##### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The UE initiates a PS attach procedure. The SS does not answer the PS attach procedure, but initiates a PS detach procedure (any cause except re-attach). The UE shall terminate the PS attach procedure and continue with the PS detach procedure.

The UE initiates a PS attach procedure. The SS does not answer the PS attach procedure, but initiates a PS detach procedure (cause re-attach). The UE shall ignore the PS detach procedure and continue with the PS attach.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4	SS			The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
5	<-		DETACH REQUEST	Detach type = 're-attach not required'
6	->		DETACH ACCEPT	
7	UE			The UE initiates the attach procedure by MMI or AT command.
8	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
9	SS			The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
10	<-		DETACH REQUEST	Detach type = 're-attach required'
11	UE			The UE ignores the DETACH REQUEST message and continue with the attach procedure.
12	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
13	->		ATTACH COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
16	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

## Specific message contents

None.

## 12.2.1.9.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the Detach type in the DETACH REQUEST message.

Case1) Detach type = 're-attach not required' GMM cause is not re-attach

At step6, when the DETACH REQUEST message is received by the UE while waiting for an ATTACH ACCEPT message, UE shall:

- terminate the PS attach procedure and continue with the PS detach procedure.

Case2) Detach type = 're-attach required'

At step11, when the DETACH REQUEST message is received by the UE while waiting for an ATTACH ACCEPT message, UE shall:

- ignore the PS detach procedure and continue with the PS attach procedure.

## 12.2.1.10 PS attach / abnormal cases / Failure due to non-integrity protection

### 12.2.1.10.1 Definition

### 12.2.1.10.2 Conformance requirement

Except the messages listed below, no layer 3 signalling messages shall be processed by the receiving MM and GMM entities or forwarded to the CM entities, unless the security mode control procedure is activated for that domain.

- GMM messages:
  - AUTHENTICATION & CIPHERING REQUEST
  - AUTHENTICATION & CIPHERING REJECT
  - IDENTITY REQUEST
  - ATTACH REJECT
  - ROUTING AREA UPDATE ACCEPT (at periodic routing area update with no change of routing area or temporary identity)
  - ROUTING AREA UPDATE REJECT
  - SERVICE REJECT
  - DETACH ACCEPT (for non power-off)

#### Reference(s):

3GPP TS 24.008 clause 4.1.1.1.1

### 12.2.1.10.3 Test purpose

To verify that the UE ignores NAS signalling messages when the security mode procedure is not activated.

### 12.2.1.10.4 Method of test

#### Initial Conditions

#### System Simulator:

One cell operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

#### User Equipment:

The UE has a valid IMSI.

#### Related ICS Statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No

#### Test procedure

The attach procedure is initiated. Upon reception of ATTACH REQUEST message from the UE, the SS responds with an ATTACH ACCEPT message without the integrity protection. The UE shall ignore this message and re-transmit ATTACH REQUEST message at expiry of timer T3310.

This time the SS starts the authentication procedure and initiates the integrity protection. After receiving ATTACH ACCEPT message, the UE shall respond to ATTACH COMPLETE message.

#### Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach procedure (see ICS).
3		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication.
6	->		AUTHENTICATION AND CIPHERING RESPONSE	Set PS-CKSN RES
7		SS		The SS does not initiate the security mode procedure.
8	<-		ATTACH ACCEPT	
9	UE			The UE ignores ATTACH ACCEPT message.
10		SS		The SS waits 15 sec (T3310).
11	->		ATTACH REQUEST	The UE re-transmits the message. The SS verifies that the period of time between the ATTACH REQUEST messages corresponds to the value of T3310.
12	<-		AUTHENTICATION AND CIPHERING REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
13	->		AUTHENTICATION AND CIPHERING RESPONSE	Request authentication. Set PS-CKSN RES
14		SS		The SS starts integrity protection.
15	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI
16	->		ATTACH COMPLETE	
17	UE			The UE is switched off or power is removed (see ICS).
18	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
19		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

#### Specific Message Contents

None.

#### 12.2.1.10.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, UE shall;

- ignore the first ATTACH ACCEPT message.

At step11, UE shall;

- re-transmit ATTACH REQUEST message after expiry of timer T3310.

At step16, UE shall;

- respond to ATTACH COMPLETE message after the UE receives the second ATTACH ACCEPT message.

## 12.2.2 Combined PS attach

### 12.2.2.1 Combined PS attach / PS and non-PS attach accepted

#### 12.2.2.1.1 Definition

#### 12.2.2.1.2 Conformance requirement

- 1) If the network accepts the combined PS attach procedure (signalled by an IMSI) and allocates a P-TMSI, the UE shall acknowledge the P-TMSI and continue communication with the P-TMSI.
- 2) If the network accepts the combined PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.
- 3) If the network accepts the combined PS attach procedure (signalled by a P-TMSI) from the UE without reallocation of the previously used P-TMSI, the UE shall continue communication with the previously used P-TMSI.
- 4) If the network accepts the combined PS attach procedure and determines that IMSI shall be used in CS operations, the UE shall continue communication with the IMSI for CS operations.
- 5) If the network accepts the combined PS attach procedure and determines that a TMSI shall be used in CS operations, the UE shall continue communication with the TMSI for CS operations.

#### Reference

3GPP TS 24.008 clause 4.7.3.2.

#### 12.2.2.1.3 Test purpose

To test the behaviour of the UE if the network accepts the PS attach procedure.

The following cases are identified:

- 1) P-TMSI / P-TMSI signature is allocated;
- 2) P-TMSI / P-TMSI signature is reallocated;
- 3) Old P-TMSI / P-TMSI signature is not changed;
- 4) Mobile terminating CS call is allowed with IMSI;
- 5) Mobile terminating CS call is not allowed with TMSI.

#### 12.2.2.1.4 Method of test

##### Initial condition

##### System Simulator:

One cell operating in network operation mode I.

##### User Equipment:

The UE has a valid IMSI.



## Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

## Test procedure

- 1) The UE sends an ATTACH REQUEST message with identity IMSI. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. The UE acknowledge the P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. For CS calls, the IMSI is used.
- 2) The UE is CS paged in order to verify that the IMSI is used for CS calls.
- 3) The UE is PS paged in order to verify that the new P-TMSI is used for PS services.
- 4) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS allocates a new P-TMSI and returns ATTACH ACCEPT message with the new P-TMSI and a new TMSI. The UE acknowledge the P-TMSI and the TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. For CS calls, the new TMSI is used. The UE is CS paged in order to verify that the new TMSI is used for CS services.
- 5) The UE is PS paged in order to verify that the new P-TMSI is used for PS services. The UE will not answer signalling addressed to the old P-TMSI.
- 6) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS accepts the P-TMSI and returns ATTACH ACCEPT message without any P-TMSI. Further communication UE - SS is performed by the previously used P-TMSI.
- 7) The UE is PS paged in order to verify that the previously used P-TMSI is used for PS services.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity =IMSI Routing area identity = RAI-1
5		->	ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
6		<-	PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services. Paging cause = "Terminating conversational call"
7		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
8			Void	
9			Void	
10		->	PAGING RESPONSE	Mobile identity = IMSI
11		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
12			Void	
13		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging for PS services Paging cause = "Terminating interactive call"
13a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
13b			Void	
13c			Void	
14		->	SERVICE REQUEST	service type = "paging response"
14aa		SS		The SS starts integrity protection.
14a		SS		The SS releases the RRC connection.
14b			Void	
15	UE			The UE is switched off or power is removed (see ICS).
15a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
16		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
16a		SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .

Step	Direction		Message	Comments
	UE	SS		
17	UE			The UE is powered up or switched on and initiates an attach (see ICS).
17a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
18		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 TMSI status = no valid TMSI available Routing area identity = RAI-1
18a		<-	AUTHENTICATION AND CIPHERING REQUEST	
18b		->	AUTHENTICATION AND CIPHERING RESPONSE	
18c		SS		The SS starts integrity protection.
19		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
20		->	ATTACH COMPLETE	
21			Void	
21b			Void	
21c		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
22		<-	PAGING TYPE 1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
23		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
24			Void	
25			Void	
26		->	PAGING RESPONSE	Mobile identity = TMSI-1
27		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
28			Void	
29		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging for PS services Paging cause = "Terminating interactive call"
29a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
29b			Void	
29c			Void	
30		->	SERVICE REQUEST	service type = "paging response"
30aa		SS		The SS starts integrity protection.
30a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
30b			Void	
31		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging for PS services Paging cause = "Terminating interactive call"
32		UE		No response from the UE to the request. This is checked for 10 seconds.
33		UE		The UE is switched off or power is removed (see ICS).
33a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
34		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Step	Direction		Message	Comments
	UE	SS		
34a		SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
35		UE		The UE is powered up or switched on and initiates an attach (see ICS).
35a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
36		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-2 Routing area identity = RAI-1 TMSI status = valid TMSI available
36a		<-	AUTHENTICATION AND CIPHERING REQUEST	
36b		->	AUTHENTICATION AND CIPHERING RESPONSE	
36c		SS		The SS starts integrity protection.
37		<-	ATTACH ACCEPT	No new mobile identity assigned. TMSI and P-TMSI not included. Attach result = 'Combined PS / IMSI attached' P-TMSI-3 signature Routing area identity = RAI-1
37a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
38		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging for PS services Paging cause = "Terminating interactive call"
38a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
38b			Void	
38c			Void	
39		->	SERVICE REQUEST	service type = "paging response"
39aa		SS		The SS starts integrity protection.
39a		SS		The SS releases the RRC connection.
39b			Void	
40		UE		The UE is switched off or power is removed (see ICS).
40a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
41		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
42		SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .

### Specific message contents

None.

#### 12.2.2.1.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

Case 1) SS accept the combined PS attach procedure (signalled by an IMSI) and allocates a P-TMSI.

At step5, UE shall

- send the ATTACH COMPLETE message.

At step10, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step14, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

Case 2) SS accepts the combined PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI and TMSI.

At step20, UE shall:

- send the ATTACH COMPLETE message.

At step26, when the UE receives the paging message for CS domain with Mobile identity = TMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step30, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

Case 3) SS accepts the combined PS attach procedure (signalled by a P-TMSI) from the UE without reallocation of the previously used P-TMSI.

At step39, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

## 12.2.2.2 Combined PS attach / PS only attach accepted

### 12.2.2.2.1 Definition

### 12.2.2.2.2 Conformance requirement

- 1) If the network accepts the combined PS attach procedure, but GMM cause code 'IMSI unknown in HLR' is sent to the UE the User Equipment shall delete the stored TMSI, LAI and CKSN. The User Equipment shall consider USIM invalid for non-PS services until power is switched off or USIM is removed.
- 2) If the network accepts the combined PS attach procedure, but GMM cause code 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is sent to the UE, an UE operation mode A UE may perform an MM IMSI attach procedure.

### Reference

3GPP TS 24.008 clause 4.7.3.2.

### 12.2.2.2.3 Test purpose

#### Test purpose1

To test the behaviour of the UE if the network accepts the PS attach procedure with indication PS only, GMM cause 'IMSI unknown in HLR'.

### Test purpose2

To test the behaviour of the UE which does not support an automatic MM IMSI attach if the network accepts the PS attach procedure with indication PS only, GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion'.

### Test purpose 3

To test the behaviour of the UE which supports an automatic MM IMSI attach if the network accepts the PS attach procedure with indication PS only, GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion'.

#### 12.2.2.2.4 Method of test

##### 12.2.2.2.4.1 Test procedure1

#### Initial condition

##### System Simulator:

One cell operating in network operation mode I.

##### User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The UE sends an ATTACH REQUEST message with identity IMSI. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. GMM cause 'IMSI unknown in HLR' is indicated from SS. Further communication UE - SS is performed by the P-TMSI. CS services are not possible.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI  TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature GMM cause = 'IMSI unknown in HLR' Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
7	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
8	UE			The UE is switched off or power is removed (see ICS).
9	->		DETACH REQUEST	Message not sent if power is removed.
10	SS			Detach type = 'power switched off, PS detach' The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

## 12.2.2.2.4.2 Test procedure2

## Initial condition

## System Simulator:

One cell operating in network operation mode I. T3212 and T3302 is set to 6 minutes.

## User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The UE sends an ATTACH REQUEST message. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The UE sends a ROUTING AREA UPDATE REQUEST message. The SS returns a ROUTING AREA UPDATE ACCEPT message. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The ROUTING AREA UPDATE procedure is repeated four times. An UE operation mode A UE may then perform an MM IMSI attach procedure (according to the

ICS statement). Further communication UE - SS is performed by the P-TMSI. The existence of a signalling channel is verified by a request for mobile identity.



## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A and no automatic MM IMSI attach procedure is indicated (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature  Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
5	->		ATTACH COMPLETE	
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-2 signature Routing area identity = RAI-1
8	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-3 signature Routing area identity = RAI-1
11	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-4 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-4 signature Routing area identity = RAI-1
13	SS			The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.
14	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-5 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)

Step	Direction		Message	Comments
	UE	SS		
16		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-5 signature Routing area identity = RAI-1
17		<-	ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-6 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
18-20 21			(void)	
21	UE			The UE is switched off or power is removed (see ICS).
22		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'. Stop the sequence.
23		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

#### 12.2.2.2.4.3 Test procedure 3

##### Initial condition

##### System Simulator:

One cell operating in network operation mode I. T3212 and T3302 is set to 6 minutes.

##### User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

##### Related ICS/IXIT statements

Support of PS service Yes/No  
 UE operation mode A Yes/No  
 Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

##### Test procedure

The UE sends an ATTACH REQUEST message. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The UE sends a ROUTING AREA UPDATE REQUEST message. The SS returns a ROUTING AREA UPDATE ACCEPT message. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The ROUTING AREA UPDATE procedure is repeated four times. An UE operation mode A UE may then perform an MM IMSI attach procedure (according to the ICS statement). Further communication UE - SS is performed by the P-TMSI. The existence of a signalling channel is verified by a request for mobile identity.

##### Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Automatic MM IMSI attach procedure is indicated (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'PS only attached' P-TMSI-2 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
5	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-2 signature Routing area identity = RAI-1
6	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-3 signature Routing area identity = RAI-1
8	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-4 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-4 signature Routing area identity = RAI-1
10	SS			The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.
11	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-5 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-5 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available

Step	Direction		Message	Comments
	UE	SS		
13		SS		The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.
14	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-6 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
15	UE			An automatic MM IMSI attach procedure is initiated.
16	UE		Registration on CS	Optional step. See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI Steps 4917 - 5523 are only performed if the UE has performed the Registration Procedure in step 4116.
17	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
18	->		RRC CONNECTION REQUEST	
19	<-		RRC CONNECTION SETUP	
20	->		RRC CONNECTION SETUP COMPLETE	
21	->		PAGING RESPONSE	Mobile identity = TMSI-1
22	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
23	->		RRC CONNECTION RELEASE COMPLETE	
24	UE			The UE is switched off or power is removed (see ICS).
25	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
26		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

#### Specific message contents

None.

#### 12.2.2.2.5 Test requirements

##### Test requirements for Test purpose1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

##### Test requirements for Test purpose2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, 10, 12 and 16, when the routing area updating attempt counter is less than 5 and the stored RAI is equal to the RAI of the current serving cell, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

#### Test requirements for Test purpose3

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with information elements specified in the above Expected Sequence.

At step5, 7, 9 and 11, when the routing area updating attempt counter is less than 5 and the stored RAI is equal to the RAI of the current serving cell, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

At step16, UE shall:

- perform MM location updating procedure.

At step21, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

### 12.2.2.3 Combined PS attach / PS attach while IMSI attach

#### 12.2.2.3.1 Definition

#### 12.2.2.3.2 Conformance requirement

If the PS UE is already attached for non-PS services by the MM specific attach procedure, but wants to perform an attach for PS services, the combined PS attach procedure is performed.

#### Reference

3GPP TS 24.008 clause 4.7.3.2.

#### 12.2.2.3.3 Test purpose

To test the behaviour of the UE if PS attach performed while IMSI attached.

#### 12.2.2.3.4 Method of test

#### Initial condition

##### System Simulator:

One cell operating in network operation mode I. ATT flag is set.

##### User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The UE is forced to register for CS services but not to PS services. The SS verifies that the UE does not respond to paging messages for PS domain. Then the UE is triggered to perform the PS attach procedure and the SS verifies that it responds to PS paging messages.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS) and configured not to perform an automatic PS attach at switch on.
2	UE			The UE is powered up or switched on. No PS attach is performed (see ICS).
3			Registration on CS	See TS 34.108 Location updating type = IMSI attach.
4	<-		PAGING TYPE1	The SS allocates TMSI-1 Mobile identity = P-TMSI-1 Paging order is for PS services.
5	UE			No response from the UE to the request. This is checked for 10 seconds.
6	UE			The UE is triggered to perform a PS attach.
7	->		ATTACH REQUEST	Attach type = 'PS attach while IMSI attached' or 'Combined PS / IMSI attached' Mobile identity =P-TMSI-1 Routing area identity = RAI-1
7a	<-		AUTHENTICATION AND CIPHERING REQUEST	
7b	->		AUTHENTICATION AND CIPHERING RESPONSE	
7c	SS			The SS starts integrity protection.
8	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' No new mobile identity assigned. TMSI and P-TMSI not included P-TMSI-2 signature Routing area identity = RAI-1
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	->		RRC CONNECTION REQUEST	
11	<-		RRC CONNECTION SETUP	
12	->		RRC CONNECTION SETUP COMPLETE	
13	->		SERVICE REQUEST	service type = "paging response"
14	<-		RRC CONNECTION RELEASE	
15	->		RRC CONNECTION RELEASE COMPLETE	
16	UE			The UE is switched off or power is removed (see ICS).
17	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
18	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

## Specific message contents

None.

### 12.2.2.3.5 Test requirements

UE is already attached for non-PS service with the MM specific attach procedure.

At step5, UE shall:

- not respond to the paging message for PS domain.

At step7, when the UE is requested to attach for PS services, UE shall:

- perform the combined PS attach procedure.

At step13, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

### 12.2.2.4 Combined PS attach / rejected / IMSI invalid / illegal ME

#### 12.2.2.4.1 Definition

#### 12.2.2.4.2 Conformance requirement

- 1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall consider USIM invalid for PS and non-PS services until power is switched off or USIM is removed.
- 2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall delete the stored TMSI, LAI, CSKN, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

#### Reference

3GPP TS 24.008 clause 4.7.3.2

#### 12.2.2.4.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure of the UE with the cause 'Illegal ME'.

#### 12.2.2.4.4 Method of test

#### Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1(RAI-2).  
All three cells are operating in network operation mode I.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

#### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
USIM removal possible without powering down	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

### Test procedure

The SS rejects a PS attach with the cause value 'Illegal ME'. The SS checks that the UE does not perform PS attach in the same or another PLMN. CS services are not possible as the USIM is blocked for CS services. PS services are not possible as the USIM is blocked for PS services.



## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity = P-TMSI-1 Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted
5	<-		ATTACH REJECT	GMM cause 'Illegal ME'.
6	UE		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
7	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
8	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services
9	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.
12		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
13	UE			Cell B is preferred by the UE.
14	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
15	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
18	UE			Cell C is preferred by the UE.
19	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
20	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for PS services
21	UE			No response from the UE to the request. This is checked for 10 seconds.
22	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
23	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).

Step	Direction		Message	Comments
	UE	SS		
24	UE			Step 25 is only performed for non-auto attach UE.
25	UE		Registration on CS	A location updating procedure is initiated. See TS34.108
26	UE			Parameter Mobile identity is IMSI.
27	->		ATTACH REQUEST	UE initiates an attach automatically (see ICS), by MMI or AT commands. Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
27a	<-		AUTHENTICATION AND CIPHERING REQUEST	
27b	->		AUTHENTICATION AND CIPHERING RESPONSE	
27c	SS			The SS starts integrity protection.
28	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-2
29	->		ATTACH COMPLETE	
30	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
31	->		RRC CONNECTION REQUEST	
32	<-		RRC CONNECTION SETUP	
33	->		RRC CONNECTION SETUP COMPLETE	
34	->		PAGING RESPONSE	Mobile identity = TMSI-2
35	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
36	->		RRC CONNECTION RELEASE COMPLETE	
37	UE			The UE is switched off or power is removed (see ICS).
38	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
39	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.2.2.4.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, 9 and 16, when the UE receives the paging message for CS domain, UE shall,

- not respond to the paging message for CS domain.

At step11 and 21, when the UE receives the paging message for PS domain, UE shall,

- not respond to the paging message for PS domain.

At step27, when the USIM is replaced, UE shall:

- perform the combined PS attach procedure.

At step34, when the UE receives the paging message for CS domain, UE shall,

- respond to the paging message for CS domain by sending the RAGING RESPONSE message.

### 12.2.2.5 Combined PS attach / rejected / PS services and non-PS services not allowed

#### 12.2.2.5.1 Definition

#### 12.2.2.5.2 Conformance requirement

- 1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'PS services and non-PS services not allowed', the User Equipment shall consider USIM invalid for PS and non-PS services until power is switched off or USIM is removed.
- 2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'PS services and non-PS services not allowed', the User Equipment shall delete the stored TMSI, LAI, CSKN, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

#### Reference

3GPP TS 24.008 clause 4.7.3.2.

#### 12.2.2.5.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure of the UE with the cause 'PS services and non-PS services not allowed'.

#### 12.2.2.5.4 Method of test

##### Initial condition

##### System Simulator:

- Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2). Both cells are operating in network operation mode I.

##### User Equipment:

- The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

##### Related ICS/IXIT statements

- Support of PS service    Yes/No
- UE operation mode A    Yes/No
- Switch off on button    Yes/No
- Automatic PS attach procedure at switch on or power on    Yes/No

##### Test procedure

The SS rejects a PS attach with the cause value 'PS services and non-PS services not allowed'. The SS checks that the UE does not perform PS attach in the same or another PLMN. CS services are not possible as the USIM is blocked for CS services. PS services are not possible as the USIM is blocked for PS services.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
5	<-		ATTACH REJECT	GMM cause 'PS services and non-PS services not allowed'
6	UE			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds).
7	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS Paging.
10	UE			No response from the UE to the request. This is checked for 10 seconds
11		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
12			(void)	
13	UE			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds).
14	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
15	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
16	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
17	UE			No response from the UE to the request. This is checked for 10seconds.
18	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.
19	UE		Registration on CS	The UE is powered up or switched. See TS 34.108 This step is applied only for non-auto attach UE.
20	UE			Location Update Procedure initiated from the UE. Parameter mobile identity is IMSI.
21	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
22	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
22a	<-		AUTHENTICATION AND CIPHERING REQUEST	
22b	->		AUTHENTICATION AND CIPHERING RESPONSE	
22c	SS			The SS starts integrity protection.

Step	Direction		Message	Comments
	UE	SS		
23		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-2
24		->	ATTACH COMPLETE	
25		<-	PAGING TYPE1	
26		->	RRC CONNECTION REQUEST	Mobile identity = TMSI-1 Paging order is for CS services.
27		<-	RRC CONNECTION SETUP	
28		->	RRC CONNECTION SETUP COMPLETE	
29		->	PAGING RESPONSE	Mobile identity = TMSI-1 After sending of this message, the SS waits for disconnection of the CS signalling link.
30		<-	RRC CONNECTION RELEASE	
31		->	RRC CONNECTION RELEASE COMPLETE	Mobile identity = P-TMSI-1 Paging is for PS services.
32		<-	PAGING TYPE1	
33		->	RRC CONNECTION REQUEST	
34		<-	RRC CONNECTION SETUP	Service type = "paging response"
35		->	RRC CONNECTION SETUP COMPLETE	
36		->	SERVICE REQUEST	
37		<-	RRC CONNECTION RELEASE	The UE is switched off or power is removed (see ICS). Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
38		->	RRC CONNECTION RELEASE COMPLETE	
39	UE			
40		->	DETACH REQUEST	
41		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.2.2.5.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8 and 14, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step10 and 17, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step22, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure.

At step29, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step36, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

### 12.2.2.6 Combined PS attach / rejected / PS services not allowed

#### 12.2.2.6.1 Definition

#### 12.2.2.6.2 Conformance requirement

- 1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'PS services not allowed', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.
- 2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'PS services not allowed' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.
- 3) A PS class AUE shall perform an MM IMSI attach procedure.

#### Reference

3GPP TS 24.008 clause 4.7.3.2

#### 12.2.2.6.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'PS services not allowed'.

#### 12.2.2.6.4 Method of test

##### Initial condition

##### System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).  
Both cells are operating in network operation mode I.  
ATT flag set to 1

##### User Equipment:

The UE has a valid TMSI, P-TMSI-1 and RAI-1.

##### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

##### Test procedure

The SS rejects a normal attach with the cause value 'PS services not allowed'. The SS checks that the UE does not perform PS attach. PS services are not possible. An UE operation mode A UE shall perform an MM IMSI attach.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on.
2a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE.
2b	UE			Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
3	->		ATTACH REQUEST	UE initiates an attach automatically (see ICS), via MMI or AT commands. Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity = P-TMSI-1
4	<-		ATTACH REJECT	Routing area identity = RAI-1 GMM cause 'PS services not allowed'
5	UE			An automatic MM IMSI attach procedure is initiated.
6	UE		Registration on CS	See TS 34.108 Location updating type = IMSI attach.
7	<-		PAGING TYPE1	The SS allocates TMSI-2. Mobile identity = TMSI-2 Paging order is for CS services.
8	->		RRC CONNECTION REQUEST	
9	<-		RRC CONNECTION SETUP	
10	->		RRC CONNECTION SETUP COMPLETE	
11	->		PAGING RESPONSE	Mobile identity = TMSI-2
12	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signaling link.
13	->		RRC CONNECTION RELEASE COMPLETE	
14		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
15	UE			Cell B is preferred by the UE.
16	UE			A location updating procedure is initiated.
17	UE		Registration on CS	See TS 34.108 Location updating type = normal.
18	<-		PAGING TYPE1	The SS allocates TMSI-1. Mobile identity = TMSI-1 Paging order is for CS services.
19	->		RRC CONNECTION REQUEST	
20	<-		RRC CONNECTION SETUP	
21	->		RRC CONNECTION SETUP COMPLETE	
22	->		PAGING RESPONSE	Mobile identity = TMSI-1
23	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
24	->		RRC CONNECTION RELEASE COMPLETE	
25	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging is for PS services
26	UE			No response from the UE to the request. This is checked for 10seconds.
27	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.

Step	Direction		Message	Comments
	UE	SS		
27a	UE			If switch off is performed then UE performs IMSI detach procedure.
28 28a	UE UE		Registration on CS	The UE is powered up or switched. See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
28b	UE			UE initiates an attach automatically (see ICS), via MMI or AT commands.
29	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity = IMSI
29a	<-		AUTHENTICATION AND CIPHERING REQUEST	
29b	->		AUTHENTICATION AND CIPHERING RESPONSE	
29c	SS			The SS starts integrity protection.
30	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-2 Routing area identity = RAI-2
31	->		ATTACH COMPLETE	
32	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
33	->		RRC CONNECTION REQUEST	
34	<-		RRC CONNECTION SETUP	
35	->		RRC CONNECTION SETUP COMPLETE	
36	->		PAGING RESPONSE	Mobile identity = TMSI-2
37	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
38	->		RRC CONNECTION RELEASE COMPLETE	
39	UE			The UE is switched off or power is removed (see ICS).
40	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
41	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.2.2.6.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step6, if the UE is PS class A, UE shall:

- perform the MM IMSI attach procedure.

At step11, 22 and 36, when the UE receives the paging message for CS domain, UE shall:



- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step26, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step29, UE shall:

- perform the PS attach procedure.

### 12.2.2.7a Combined PS attach / rejected / location area not allowed

#### 12.2.2.7a.1 Definition

#### 12.2.2.7a.2 Conformance requirement

- 1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:
  - 1.1 not perform combined PS attach when in the same location area.
  - 1.2 delete the stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.
  - 1.3 store the LA in the 'forbidden location areas for regional provision of service'.
  - 1.4 not delete the list of "equivalent PLMNs".
  - 1.5 perform a cell selection.
- 2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:
  - 2.1 perform combined PS attach when a new location area is entered.
  - 2.2 delete the list of forbidden LAs when power is switched off.

#### Reference

3GPP TS 24.008 clauses 4.7.3.2.

#### 12.2.2.7a.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure with the cause 'Location Area not allowed'.

To test that the UE deletes the list of forbidden LAs when power is switched off.

#### 12.2.2.7a.4 Method of test

#### Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6). All cells are operating in network operation mode I.

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

## Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No
PS attach attempted automatically by outstanding request	Yes/No

## Test procedure

The SS rejects a combined PS attach with the cause value 'Location Area not allowed'. The SS checks that the UE does not perform combined PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off. CS services are not possible unless an IMSI attach procedure is performed.

Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell".
2	UE			(see note) The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or "PS Attach while IMSI attached" Mobile identity = P-TMSI-1
3b	<-		ATTACH ACCEPT	Routing area identity = RAI-1 Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
3c	<-		DETACH REQUEST	Detach type = re-attach required
3d	->		DETACH ACCEPT	
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or "PS Attach while IMSI attached" Mobile identity = P-TMSI-1 Routing area identity = RAI-1
5	<-		ATTACH REJECT	GMM cause 'Location Area not allowed'
6	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
7	<-		PAGING TYPE1	Mobile identity = TMSI Paging order is for CS services.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	->			No response from the UE to the request. This is checked for 10 seconds
11		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
11a	UE			The UE performs cell selection.
12	UE			Cell B is preferred by the UE.
13	UE			No ATTACH REQUEST or LOCATION UPDATING REQ is sent to SS (SS waits 60 seconds)
15	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
16	UE			No response from the UE to the request. This is checked for 10seconds.
17	UE			The UE initiates an attach by MMI or AT command.
18				No attach is performed by the UE. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell C.

Step	Direction		Message	Comments
	UE	SS		
19		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
19a	UE			The UE performs cell selection
20	UE			Cell C is preferred by the UE. Step 20a and 20b are only performed by an UE which will not initiate a PS attach automatically (see ICS)
20a	UE		Registration on CS	Parameter Mobile identity is IMSI. See TS 34.108
20b	UE			UE initiates an attach via MMI or AT commands.
21	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
21a	<-		AUTHENTICATION AND CIPHERING REQUEST	
21b	->		AUTHENTICATION AND CIPHERING RESPONSE	
21c	SS			The SS starts integrity protection.
22	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-6
23	->		ATTACH COMPLETE	
24	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
25	->		RRC CONNECTION REQUEST	
26	<-		RRC CONNECTION SETUP	
27	->		RRC CONNECTION SETUP COMPLETE	
28	->		PAGING RESPONSE	Mobile identity = TMSI-1
29	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
30	->		RRC CONNECTION RELEASE COMPLETE	
31	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
32	->		RRC CONNECTION REQUEST	
33	<-		RRC CONNECTION SETUP	
34	->		RRC CONNECTION SETUP COMPLETE	
35	->		SERVICE REQUEST	Service type = "paging response"
36	<-		RRC CONNECTION RELEASE	
37	->		RRC CONNECTION RELEASE COMPLETE	
38	UE			The UE is switched off or power is removed (see ICS).
39	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
39a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
				The following messages are sent and shall be received on cell B.

Step	Direction		Message	Comments
	UE	SS		
40	UE			Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note) Cell B is preferred by the UE.
41	UE			The UE is powered up or switched on and initiates an attach (see ICS).
42				Step 43 is only performed for non-auto attach UE.
43	UE		Registration on CS	See TS 34.108
44	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
45	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or "PS Attach while IMSI attached" Mobile identity = P-TMSI-1 Routing area identity = RAI-6
45a	<-		AUTHENTICATION AND CIPHERING REQUEST	
45b	->		AUTHENTICATION AND CIPHERING RESPONSE	
45c	SS			The SS starts integrity protection.
46	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI-4
47	->		ATTACH COMPLETE	
48	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
49	->		RRC CONNECTION REQUEST	
50	<-		RRC CONNECTION SETUP	
51	->		RRC CONNECTION SETUP COMPLETE	
52	->		PAGING RESPONSE	Mobile identity = TMSI-2
53	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
54	->		RRC CONNECTION RELEASE COMPLETE	
55	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
56	->		RRC CONNECTION REQUEST	
57	<-		RRC CONNECTION SETUP	
58	->		RRC CONNECTION SETUP COMPLETE	
59	->		SERVICE REQUEST	service type = "paging response"
60	<-		RRC CONNECTION RELEASE	
61	->		RRC CONNECTION RELEASE COMPLETE	
62	UE			The UE is switched off or power is removed (see ICS).
63	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
64	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

### 12.2.2.7a.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence

At step6, when the UE receives the ATTACH REJECT message with GMM cause = 'Location Area not allowed', UE shall:

- not initiate MM location updating procedure.

At step8, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step10 and 16, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step13 and 18, when the UE is in the same location area, UE shall:

- not perform PS attach procedure.

At step21, when the UE enters a new location area, UE shall

- perform the combined PS attach procedure.

At step28 and 52, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step35 and 59, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step45, when the UE is powered up or switched on, UE shall:

- perform the combined PS attach procedure.

### 12.2.2.7b Combined PS attach / rejected / No Suitable Cells In Location Area

#### 12.2.2.7b.1 Definition

#### 12.2.2.7b.2 Conformance requirement

- 1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:
  - 1.1 not perform combined PS attach when in the same location area.
  - 1.2 delete the stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.
  - 1.3 store the LA in the 'forbidden location areas for roaming'.
  - 1.4 not delete the list of "equivalent PLMNs".
- 2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:
  - 2.1 search for a suitable cell in a different location area on the same PLMN.

#### Reference

3GPP TS 24.008 clauses 4.7.3.2.

### 12.2.2.7b.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure with the cause 'No Suitable Cells In Location Area'.

### 12.2.2.7b.4 Method of test

#### Initial condition

#### System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

#### User Equipment:

The UE has valid TMSI, P-TMSI and RAI

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS rejects a combined PS attach with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall search for a suitable cell in a different location area on the same PLMN and shall perform combined PS attach procedure in that cell

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following message are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1
5	<-		ATTACH ACCEPT	Routing area identity = RAI-1 Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
6	<-		DETACH REQUEST	Detach type = re-attach required
7	->		DETACH ACCEPT	
8		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
9	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1
10	<-		ATTACH REJECT	Routing area identity = RAI-1 GMM cause = 'No Suitable Cells In Location Area'
11		SS		The SS initiates the RRC connection release. The following message are sent and shall be received on cell B.
12	UE			The UE initiates an attach automatically, by MMI or by AT command.
13	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
14	<-		AUTHENTICATION AND CIPHERING REQUEST	
15	->		AUTHENTICATION AND CIPHERING RESPONSE	
16		SS		The SS starts integrity protection.
17	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI-3
18	->		ATTACH COMPLETE	
19	UE			The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'



21	SS	The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

### Specific message contents

None.

#### 12.2.2.7b.5 Test requirements

At step4 and 9, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected sequence.

At step13, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- initiate the combined PS attach procedure.

#### 12.2.2.7c Combined PS attach / rejected / Roaming not allowed in this location area

##### 12.2.2.7c.1 Definition

##### 12.2.2.7c.2 Conformance requirement

- 1) If the network rejects a PS attach procedure from the User Equipment with the cause 'Roaming area not allowed in this location area' the User Equipment shall:
  - 1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.
  - 1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.
  - 1.3 delete any TMSI, LAI and ciphering key sequence number.
  - 1.4 store the LAI in the list of "forbidden location areas for roaming".
  - 1.5 perform a PLMN selection.

### Reference

3GPP TS 24.008 clause 4.7.3.1.

##### 12.2.2.7c.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'Roaming not allowed in this location area'.

##### 12.2.2.7c.4 Method of test

### Initial condition

#### System Simulator:

Three cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC1/MNC1/LAC2/RAC2 (RAI-12)  
All three cells are operating in network operation mode I.

#### User Equipment:

The UE has valid TMSI, P-TMSI and RAI.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS rejects a PS attach with the cause value 'Roaming area not allowed in this location area'. The SS checks that the UE performs PLMN selection.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or "PS Attach while IMSI attached" Mobile identity = P-TMSI-1 Routing area identity = RAI-1
5	<-		ATTACH REJECT	GMM cause = 'Roaming area not allowed in this location area'
6	UE			No LOCATION UPDATING REQ and ATTACH REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
7	<-		PAGING TYPE1	Mobile identity = TMSI Paging order is for CS services.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	->			No response from the UE to the request. This is checked for 10 seconds
11	UE			UE performs PLMN selection.
12		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
13	UE			Cell B is preferred by the UE.
14	UE			No LOCATION UPDATING REQ is sent to SS (SS waits 60 seconds)
15	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
15a	<-		AUTHENTICATION AND CIPHERING REQUEST	
15b	->		AUTHENTICATION AND CIPHERING RESPONSE	
15c	SS			The SS starts integrity protection.
16	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-4
17	->		ATTACH COMPLETE	
18		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
19	UE			Cell C is preferred by the UE.
20	UE		Registration on CS	Parameter Mobile identity is IMSI. See TS 34.108
21	UE			UE initiates an attach automatically (see ICS) via MMI or AT commands.

Step	Direction		Message	Comments
	UE	SS		
22		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
23		->	RRC CONNECTION REQUEST	
24		<-	RRC CONNECTION SETUP	
25		->	RRC CONNECTION SETUP COMPLETE	
26		->	PAGING RESPONSE	Mobile identity = TMSI-1
27		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
28		->	RRC CONNECTION RELEASE COMPLETE	
29		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
30		->	RRC CONNECTION REQUEST	
31		<-	RRC CONNECTION SETUP	
32		->	RRC CONNECTION SETUP COMPLETE	
33		->	SERVICE REQUEST	Service type = "paging response"
34		<-	RRC CONNECTION RELEASE	
35		->	RRC CONNECTION RELEASE COMPLETE	
36	UE			The UE is switched off or power is removed (see ICS).
37		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
38		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.2.2.7c.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, UE shall:

- not perform MM IMSI attach and PS attach.

At step8, UE shall:

- not respond to paging for CS domain service.

At step10, UE shall:

- not respond to paging for PS domain service.

At step15, UE shall:

- perform PS attach procedure.

At step20, UE shall:

- perform MM IMSI attach procedure.

## 12.2.2.7d Combined PS attach / rejected / PS services not allowed in this PLMN

### 12.2.2.7d.1 Definition

### 12.2.2.7d.2 Conformance requirement

- 1) If the network rejects a PS attach procedure from the User Equipment with the cause 'PS service not allowed in this PLMN' the User Equipment shall:
  - 1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.
  - 1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.
  - 1.3 store the PLMN identity in the "forbidden PLMNs for PS service" list.
- 2) If the UE is in UE operation mode A the User Equipment shall:
  - 2.1 perform IMSI attach for non-GPRS services by use of the MM IMSI attach procedure.

### Reference

3GPP TS 24.008 clause 4.7.3.1.

### 12.2.2.7d.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'PS service not allowed in this PLMN'.

### 12.2.2.7d.4 Method of test

#### Initial condition

#### System Simulator:

Two cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2). All two cells are operating in network operation mode I.

The PLMN contains Cell B is equivalent to the PLMN that contains Cell A.

#### User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

#### Related ICS/IXIT statements

Support of PS service Yes/No  
UE operation mode C Yes/No  
UE operation mode A Yes/No (only if mode C not supported)  
Switch off on button Yes/No  
Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS rejects a PS attach with the cause value 'PS service not allowed in this PLMN'. The SS checks that the UE does not perform PS attach and performs an IMSI attach for non-PS services by use of the MM IMSI attach procedure when in the same cell.

After the cell is changed to equivalent PLMN, the UE shall perform PS attach procedure.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
2	UE			The UE is set in UE operation mode A (see ICS).
3		SS		The SS is set in network operation mode I. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Non-suitable cell ". (see note)
4	UE		Registration on CS	The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
5	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
6	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =P-TMSI-1
7	<-		ATTACH ACCEPT	Routing area identity = RAI-1 Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature
8	<-		DETACH REQUEST	Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
9	->		DETACH ACCEPT	Detach type = re-attach required
10	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
11	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =P-TMSI-1
12	<-		ATTACH REJECT	Routing area identity = RAI-1 GMM cause = 'PS service not allowed in this PLMN'
13	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
14		SS		Set the cell type of cell A to the " Non-suitable cell ". Set the cell type of cell B to the " Serving cell". (see note)
15	->		ATTACH REQUEST	The following messages are sent and shall be received on cell B. Attach type = 'PS attach' Mobile identity = IMSI
16	<-		AUTHENTICATION AND CIPHERING REQUEST	
17	->		AUTHENTICATION AND CIPHERING RESPONSE	
18	SS			The SS starts integrity protection.
19	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2
20	->		ATTACH COMPLETE	
21	UE			The UE is switched off or power is removed (see ICS).
22	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
23		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".
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### Specific message contents

None.

#### 12.2.2.7d.5 Test requirements

At step5 and 10, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step4 and 9, UE shall:

- perform MM IMSI attach.

At step12, UE shall:

- not perform PS attach procedure.

At step14, UE shall:

- perform PS attach procedure.

#### 12.2.2.8 Combined PS attach / abnormal cases / attempt counter check / miscellaneous reject causes

##### 12.2.2.8.1 Definition

##### 12.2.2.8.2 Conformance requirement

- 1) When a combined PS attach procedure is rejected with the attempt counter less than five, the User Equipment shall repeat the combined PS attach procedure after T3311 timeout.
- 2) When a combined PS attach procedure is rejected with the attempt counter five, the User Equipment shall delete the stored TMSI, LAI, CKSN, P-TMSI, P-TMSI signature, PS CKSN and RAI and start T3302.
- 3) When the T3302 expire, a new combined PS attach procedure shall be initiated.

GMM cause codes that can be selected are:

'TMSI unknown in HLR'

'UE identity cannot be derived by the network'

'Network failure'

'Congestion'

'retry upon entry into a new cell'

'Semantically incorrect message'

'Invalid mandatory information'

'Message type non-existent or not implemented'

'Message type not compatible with the protocol state'

'Information element non-existent or not implemented'

'Conditional IE error'

'Message not compatible with the protocol state'

'Protocol error, unspecified'

## Reference

3GPP TS 24.008 clause 4.7.3.2.

### 12.2.2.8.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

### 12.2.2.8.4 Method of test

#### Initial condition

##### System Simulator:

One cell operating in network operation mode I.

##### User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No Automatic PS attach procedure at switch on or power on Yes/No

Switch off on button Yes/No

#### Test procedure

The UE initiates a combined PS attach procedure (attempt counter zero).

The SS rejects the attach with an arbitrarily chosen cause code.



The UE initiates a new combined PS attach procedure (attempt counter one) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter two) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter three) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter four) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE shall not perform a new successful attach procedure after 15 seconds.

The UE initiates a combined PS attach procedure with attempt counter zero after T3302 expires without P-TMSI, P-TMSI signature, PS CKSN and RAI.

T3302; set to 10 minutes.

T3311; 15 seconds.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
5	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
6	SS			The SS verifies that the time between the attach reject and attach request is T3311
7	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
8	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
9	SS			The SS verifies that the time between the attach reject and attach request is T3311
10	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
11	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
12	SS			The SS verifies that the time between the attach reject and attach request is T3311
13	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
14	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
15	SS			The SS verifies that the time between the attach reject and attach request is T3311
16	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
17 (optional step)	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Location Update Procedure may be initiated from the UE.
20	<-		PAGING TYPE1	Parameter mobile identity is IMSI. Paging order is for PS services. Mobile identity = P-TMSI-1
21	UE			No response from the UE to the request. This is checked for 10seconds.
21a			Void	
22	SS			The SS verifies that the UE does not attempt to attach for T3302 .
23	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' 'PS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
23a	<-		AUTHENTICATION AND CIPHERING REQUEST	
23b	->		AUTHENTICATION AND CIPHERING RESPONSE	
23c	SS			The SS starts integrity protection.
24	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity P-TMSI-1 P-TMSI signature Mobile identity = TMSI-1 Routing area identity = RAI-1
25	->		ATTACH COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
26		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services..
27		->	RRC CONNECTION REQUEST	
28		<-	RRC CONNECTION SETUP	
29		->	RRC CONNECTION SETUP COMPLETE	
30		->	PAGING RESPONSE	Mobile identity = TMSI-1
31		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
32		->	RRC CONNECTION RELEASE COMPLETE	
33		<-	PAGING TYPE1	Mobile identity = P-TMSI-1
33a		->	RRC CONNECTION REQUEST	
33b		<-	RRC CONNECTION SETUP	
33c		->	RRC CONNECTION SETUP COMPLETE	
34		->	SERVICE REQUEST	Service type = "paging response"
34a		<-	RRC CONNECTION RELEASE	
34b		->	RRC CONNECTION RELEASE COMPLETE	
35		UE		The UE is switched off or power is removed (see ICS).
36		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
37		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

### Specific message contents

None.

### 12.2.2.8.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the conditions described below.

Case1) A combined PS attach procedure is rejected with the attempt counter less than five

At step 5, 8, 11 and 14, when the timer T3311 timeout has occurred, UE shall:

- repeat the combined PS attach procedure.

Case2) A combined PS attach procedure is rejected with the attempt counter five

At step21, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

Case3) The T3302 expires

At step23, UE shall:

- re-initiate the new combined PS attach procedure.

At step30, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step34, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

## 12.2.2.9 Combined PS attach / abnormal cases / PS detach procedure collision

### 12.2.2.9.1 Definition

### 12.2.2.9.2 Conformance requirement

- 1) When a DETACH REQUEST message is received by the UE (any cause except re-attach) while waiting for an ATTACH ACCEPT message or ATTACH REJECT message, the UE shall terminate the combined PS attach procedure and continue with the combined PS detach procedure.
- 2) When a DETACH REQUEST message is received by the UE (cause re-attach) while waiting for an ATTACH ACCEPT message or ATTACH REJECT message, the UE shall ignore the combined PS detach procedure and continue with the combined PS attach procedure.

### Reference

3GPP TS 24.008 clause 4.7.3.2.

### 12.2.2.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

### 12.2.2.9.4 Method of test

#### Initial condition

##### System Simulator:

One cell operating in network operation mode I.

##### User Equipment:

The UE has valid TMSI, P-TMSI and RAI. UE is Idle Updated.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Re-attach automatically when the network commands a detach with no cause value Yes/No

#### Test procedure

The UE initiates a combined PS attach procedure. The SS does not answer the combined PS attach procedure, but initiates a combined PS detach procedure (any cause except re-attach). The UE shall terminate the combined PS attach procedure and continue with the combined PS detach procedure.

The UE initiates a combined PS attach procedure. The SS does not answer the combined PS attach procedure, but initiates a combined PS detach procedure (cause re-attach). The UE shall ignore the combined PS detach procedure and continue with the combined PS attach. CS services are also possible.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4	SS			The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
5	<-		DETACH REQUEST	Detach type = 're-attach not required'
6	->		DETACH ACCEPT	
7			(void)	
8			(void)	
9	UE			The UE is attached by MMI or AT command if the UE does not re-attach automatically upon receiving a network initiated detach with no cause value, (see IXIT).
10	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
11	SS			The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
12	<-		DETACH REQUEST	Detach type = 're-attach required'
13	UE			The UE ignores the DETACH REQUEST message and continue with the attach procedure
14	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI-1
15	->		ATTACH COMPLETE	
16	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
17	->		RRC CONNECTION REQUEST	
18	<-		RRC CONNECTION SETUP	
19	->		RRC CONNECTION SETUP COMPLETE	
20	->		PAGING RESPONSE	Mobile identity = TMSI-2
21	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
22	->		RRC CONNECTION RELEASE COMPLETE	
23	<-		PAGING TYPE1	Paging order is for PS services. Mobile identity = P-TMSI-2
23a	->		RRC CONNECTION REQUEST	
23b	<-		RRC CONNECTION SETUP	
23c	->		RRC CONNECTION SETUP COMPLETE	
24	->		SERVICE REQUEST	Service type = "paging response"
24a	<-		RRC CONNECTION RELEASE	
24b	->		RRC CONNECTION RELEASE COMPLETE	
25	UE			The UE is switched off or power is removed (see ICS).
26	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
27	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

#### 12.2.2.9.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the Detach type described below.

Case1) Detach type is not re-attach

At step6, UE shall:

- respond to DETACH REQUEST message by sending DETACH ACCEPT message.

Case2) Detach type is re-attach

At step13, UE shall:

- ignore the PS detach procedure.

At step15, UE shall:

- send the ATTACH COMPLETE message.

At step20, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step24, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

## 12.3 PS detach procedure

### 12.3.1 UE initiated PS detach procedure

#### 12.3.1.1 PS detach / power off / accepted

##### 12.3.1.1.1 Definition

##### 12.3.1.1.2 Conformance requirement

The UE detaches the IMSI for PS services if the UE is switched off.

#### Reference

3GPP TS 24.008 clause 4.7.4.1

##### 12.3.1.1.3 Test purpose

To test the behaviour of the UE for the detach procedure.

## 12.3.1.1.4 Method of test

## Initial condition

## System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

## User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

The UE has been registered in the CS domain.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The UE performs a PS attach procedure.

The UE sends a DETACH REQUEST message to the SS.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set o attach to the PS services only (see ICS). If that is not supported by the UE, goto step 8.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	UE			The UE is switched off (see ICS).
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
7	->		DETACH REQUEST	Detach type = 'power switched off, PS detach'
7a				The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
8	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 7a.

## Specific message contents

None.

## 12.3.1.1.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the UE is switched off, UE shall:

- send the DETACH REQUEST message to SS with the Detach type = 'power switched off, PS detach'.



## 12.3.1.2 PS detach / accepted

### 12.3.1.2.1 Definition

### 12.3.1.2.2 Conformance requirement

- 1) The GPRS detach procedure is initiated by the UE by sending a DETACH REQUEST message. The detach type information element may indicate "GPRS detach with switching off", "GPRS detach without switching off", "IMSI detach", "GPRS/IMSI detach with switching off" or "GPRS/IMSI detach without switching off".

The UE shall include the P-TMSI in the DETACH REQUEST message. The UE shall also include a valid P-TMSI signature, if available.

- 2) Upon completion of the detach procedure, the used P-TMSI signature shall be deleted.

### Reference

3GPP TS 24.008 clause 4.7.4.1.1

3GPP TS 24.008 clause 4.7.1.3

### 12.3.1.2.3 Test purpose

To test the behaviour of the UE for the detach procedure, including treatment of P-TMSI signature.

### 12.3.1.2.4 Method of test

### Initial condition

#### System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

#### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

The UE has been registered in the CS domain.

### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No
UE PS Release	Yes/No

### Test procedure

The UE performs a PS attach procedure.

The UE sends a DETACH REQUEST message to the SS.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

The UE performs a PS attach procedure.

The UE sends a DETACH REQUEST message to the SS.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to the PS services only (see ICS). If that is not supported by the UE, goto step 18.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS		(void)	The SS releases the RRC connection.
6	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach"
7	->		DETACH REQUEST	Detach type = 'normal detach, PS detach' Mobile identity = P-TMSI-1 P-TMSI-1 signature
7a	SS			The SS starts integrity protection.
8	<-		DETACH ACCEPT	
8a	SS			The SS releases the RRC connection.
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	UE			No response from the UE to the request. This is checked for 10 seconds.
11	UE			The UE initiates an attach by MMI or AT commands
12	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
13	<-		ATTACH ACCEPT	No new mobile identity assigned Attach result = 'PS only attached' Routing area identity = RAI-1
14	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
15	->		DETACH REQUEST	Detach type = 'normal detach, PS detach' Mobile identity = P-TMSI-1
16	<-		DETACH ACCEPT	
17			(void)	
18	UE			The UE is set to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 16.

## Specific message contents

None.

### 12.3.1.2.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, UE shall:

- send the DETACH REQUEST message (without power off) to SS with mobile identity P-TMSI-1 and P-TMSI-1 signature.

At step10, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step 12, UE shall

- initiate ATTACH REQUEST message without P-TMSI signature IE.

At step 15, UE shall:

- send the DETACH REQUEST message (without power off) to SS with mobile identity P-TMSI-1 and without P-TMSI-1 signature.

### 12.3.1.3 PS detach / abnormal cases / attempt counter check / procedure timeout

#### 12.3.1.3.1 Definition

#### 12.3.1.3.2 Conformance requirement

- 1) When a T3321 timeout has occurred during a PS detach procedure with the attempt counter less than five, the User Equipment shall repeat the PS detach procedure.
- 2) When a T3321 timeout has occurred during a PS detach procedure with the attempt counter five, the User Equipment shall not repeat the procedure.

#### Reference

3GPP TS 24.008 clause 4.7.4.1.

#### 12.3.1.3.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

#### 12.3.1.3.4 Method of test

#### Initial condition

#### System Simulator:

One cell operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

#### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

## Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

## Test procedure

The UE performs a PS attach procedure.

The UE initiates a PS detach procedure (attempt counter zero). The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter one) after T3321 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter two) after T3321 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter three) after T3321 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter four) after T3321 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure with attempt counter five (after T3321 expires). The SS does not answer with DETACH ACCEPT message before T3321 timeout.

At T3321 timeout in the UE, the UE then deletes the logical link since the retransmissions have been repeated four times.

The UE performs a new PS attach procedure.

T3321; 15 seconds.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 25.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'PS only attached' Routing area identity = RAI-1
5	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
6	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
7	SS			No response is given from the SS.
8	SS			The SS verifies that the time between the detach requests is 15 seconds
9	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
10	SS			No response is given from the SS.
11	SS			The SS verifies that the time between the detach requests is 15 seconds
12	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
13	SS			No response is given from the SS.
14	SS			The SS verifies that the time between the detach requests is 15 seconds
15	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
16	SS			No response is given from the SS.
17	SS			The SS verifies that the time between the detach requests is 15 seconds
18	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
19	SS			No response is given from the SS within 40 seconds and SS verifies that the UE will not send a DETACH REQUEST again.
20	UE			Initialte a PS attach
21	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
21a	<-		AUTHENTICATION AND CIPHERING REQUEST	
21b	->		AUTHENTICATION AND CIPHERING RESPONSE	
21c	SS			The SS starts integrity protection.
22	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'PS only attached' Routing area identity = RAI-1
23				UE is switched off or power is removed (see ICS)
24	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
24a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
25	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 2 to step 24.

### Specific message contents

None.

#### 12.3.1.3.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attaché procedure with the information elements specified in the above Expected Sequence.

At step9, 12, 15 and 18, when a T3321 expires with the attempt counter less than five, UE shall:

- initiate the new PS detach procedure.

At step19, when the attempt counter is greater than or equal to five, UE shall:

- not repeat the PS detach procedure.

At step20, UE shall:

- initiate the PS attaché procedure.

#### 12.3.1.4 PS detach / abnormal cases / GMM common procedure collision

##### 12.3.1.4.1 Definition

##### 12.3.1.4.2 Conformance requirement

When any of the GMM common messages P-TMSI REALLOCATION COMMAND, GMM STATUS or GMM INFORMATION is received by the UE while waiting for a DETACH ACCEPT message with detach cause different from "power off", the UE shall ignore the GMM common message.

##### Reference

3GPP TS 24.008 clause 4.7.4.1.

##### 12.3.1.4.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

##### 12.3.1.4.4 Method of test

##### Initial condition

System Simulator:

One cell operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

User Equipment:

The UE has a valid IMSI.

##### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No
UE operation mode A	Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

### Test procedure

The following test procedure is repeated for sequence counter  $k = 1, 2, 3$ :

The UE performs a PS attach.

The UE initiates a PS detach. The SS initiates a P-TMSI REALLOCATION COMMAND message ( $k=1$ ), a GMM STATUS message ( $k=2$ ) and a GMM INFORMATION message ( $k=3$ ). The UE shall ignore the GMM common messages and continue with the PS detach procedure. The sending of the P-TMSI REALLOCATION COMMAND message ( $k = 1$ ), the GMM STATUS message ( $k = 2$ ), the GMM INFORMATION message ( $k = 3$ ) and the DETACH ACCEPT message shall be completed within Timer T3321 -10%.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

### Expected Sequence

The test sequence is repeated for  $k = 1 \dots 3$

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates a detach (without power off) by MMI or AT command.
7	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
8A	SS			The SS sends a P-TMSI REALLOCATION COMMAND message
(k=1) 9A	<-		P-TMSI REALLOCATION COMMAND	
(k=1) 10A	UE			The UE ignores the message. This is verified for 10 seconds.
(k=1) 8B	SS			The SS sends a GMM STATUS message
(k=2) 9B	<-		GMM STATUS	
(k=2) 10C	UE			The UE ignores the message. This is verified for 10 seconds.
(k=2) 8C	SS			The SS sends a GMM INFORMATION message
(k=3) 9C	<-		GMM INFORMATION	
(k=3) 10C	UE			The UE ignores the message which is verified for 10 seconds or if GMM INFORMATION message not implemented, sends a GMM STATUS with GMM Cause 'Message type non-existent or not implemented'.
11	<-		DETACH ACCEPT	The SS responds to the DETACH REQUEST
12	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds.

Note: Steps 8x, 9x, 10x and 11 shall be completed within Timer T3321 -10%.

#### Specific message contents

None.

#### 12.3.1.4.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step 10A, 10B, 10C and 13, when any of the GMM common messages P-TMSI REALLOCATION COMMAND, GMM STATUS or GMM INFORMATION is received by the UE while waiting for a DETACH ACCEPT message with detach cause different from "power off, UE shall:

- ignore any of the GMM common message.



### 12.3.1.5 PS detach / power off / accepted / PS/IMSI detach

12.3.1.5.1 Definition

12.3.1.5.2 Conformance requirement

The UE detach the IMSI for PS and non-PS services.

#### Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.5.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.5.4 Method of test

#### Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE sends a DETACH REQUEST message to the SS. The UE then deletes the logical link.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to both the PS and non-PS services (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5		->	ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
6	UE			The UE is switched off (see ICS).
6a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
7		->	DETACH REQUEST	Detach type = 'power switched off, combined PS / IMSI detach'
7a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.3.1.5.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the UE is switched off, UE shall:

- send the DETACH REQUEST message to SS with the Detach type = 'power switched off, combined PS / IMSI detach'.

### 12.3.1.6 PS detach / accepted / PS/IMSI detach

#### 12.3.1.6.1 Definition

#### 12.3.1.6.2 Conformance requirement

The UE detach the IMSI for PS and non-PS services.

#### Reference

3GPP TS 24.008 clause 4.7.4.1.

#### 12.3.1.6.3 Test purpose

To test the behaviour of the UE for the detach procedure.

#### 12.3.1.6.4 Method of test

#### Initial condition

#### System Simulator:

- One cell operating in network operation mode I.

#### User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

- Support of PS service Yes/No
- UE operation mode A Yes/No
- Switch off on button Yes/No
- Automatic PS attach procedure at switch on or power on Yes/No
- User requested combined PS and non-PS detached without powering off Yes/No

#### Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE sends a DETACH REQUEST message to the SS. When the UE receives the DETACH ACCEPT, the UE then deletes the logical link.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to both the PS and non-PS services (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
5		->	ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
6		UE		The UE initiates a detach (without power off) by MMI or AT command (see ICS).
6a		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
7		->	DETACH REQUEST	Detach type = 'normal detach, combined PS / IMSI detach'
8		<-	DETACH ACCEPT	
8a		SS		The SS releases the RRC connection.
9		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10		UE		No response from the UE to the request. This is checked for 10 seconds.
11		<-	PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
12		UE		The UE shall not initiate an RRC connection. This is checked during 3 seconds.

## Specific message contents

None.

## 12.3.1.6.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step10, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step12, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

### 12.3.1.7 PS detach / accepted / IMSI detach

#### 12.3.1.7.1 Definition

#### 12.3.1.7.2 Conformance requirement

The UE shall detach for CS services.

#### Reference

3GPP TS 24.008 clause 4.7.4.1.

#### 12.3.1.7.3 Test purpose

To test the behaviour of the UE for the detach procedure.

#### 12.3.1.7.4 Method of test

#### Initial condition

##### System Simulator:

One cell operating in network operation mode I.

##### User Equipment:

- The UE has a valid IMSI.

#### Related ICS/IXIT statements

- Support of PS service Yes/No
- UE operation mode A Yes/No
- Switch off on button Yes/No
- Automatic PS attach procedure at switch on or power on Yes/No
- User requested non-PS detached Yes/No

#### Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE performs an PS detach (for non-PS services).

CS services are not possible.

The UE attach for non-PS services by a routing area update procedure and CS services are again possible.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates a detach for non-PS services (without power off) (see ICS).
7	->		DETACH REQUEST	Detach type = 'normal detach, IMSI detach'
8	<-		DETACH ACCEPT	
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
9a	->		RRC CONNECTION REQUEST	
9b	<-		RRC CONNECTION SETUP	
9c	->		RRC CONNECTION SETUP COMPLETE	
10	->		SERVICE REQUEST	service type = "paging response"
10a	<-		RRC CONNECTION RELEASE	
10b	->		RRC CONNECTION RELEASE COMPLETE	
11	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging order is for RRC connection. This is checked during 3 seconds.
12	UE			The UE shall not initiate an RRC connection.
13	UE			This is checked during 3 seconds. The UE initiates an attach for non-PS services by a RA update procedure (see ICS).
14	->		ROUTING AREA UPDATE REQUEST	Update type = "Combined RA/LA updating with IMSI attach" P-TMSI-1 signature Routing area identity = RAI-1
15	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
16	->		ROUTING AREA UPDATE COMPLETE	
17	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
18	->		RRC CONNECTION REQUEST	
19	<-		RRC CONNECTION SETUP	
20	->		RRC CONNECTION SETUP COMPLETE	
21	->		PAGING RESPONSE	Mobile identity = TMSI-1
22	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
23	->		RRC CONNECTION RELEASE COMPLETE	
24	UE			The UE is switched off or power is removed (see ICS).

Step	Direction		Message	Comments
	UE	SS		
25	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
26	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

### Specific message contents

None.

#### 12.3.1.7.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step10, after the detach procedure (Detach type = 'normal detach, IMSI detach') is completed, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step12, after the detach procedure (Detach type = 'normal detach, IMSI detach') is completed, UE shall:

- not respond to the paging message for CS.

At step21, after the routing area updating procedure (Update type = 'Combined RA/LA updating') is completed, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

#### 12.3.1.8 PS detach / abnormal cases / change of cell into new routing area

##### 12.3.1.8.1 Definition

##### 12.3.1.8.2 Conformance requirement

When a change of cell into a new routing area is performed before DETACH ACCEPT message is received by the UE, the UE shall abort the PS detach procedure and re-initiate it after the routing area update procedure.

##### Reference

3GPP TS 24.008 clause 4.7.4.1.

##### 12.3.1.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

##### 12.3.1.8.4 Method of test

##### Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).  
Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

User requested combined PS and non-PS detached without powering off Yes/No

#### Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

Sufficient time is given for the UE to identify the neighbour cell before the UE is triggered to initiate a PS detach procedure. The DETACH ACCEPT message is delayed from the SS.

The UE performs a cell reselection to a cell in a new routing area and performs a routing area update procedure.

The UE shall re-initiate a PS detach procedure when the routing area update procedure is finished.

The UE deletes the logical link.



## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
6a	SS			SS waits 30 sec.
7	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
8	->		DETACH REQUEST	Detach type = 'normal detach, combined PS / IMSI detach'
9	SS			No response to the DETACH REQUEST message is given by the SS
10		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
11	UE			Cell B is preferred by the UE.
12	->		ROUTING AREA UPDATE REQUEST	The UE performs a RA update in the new cell. Update type = 'Combined RA/LA updating' P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = valid TMSI available or IE omitted
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated'  Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-4
14	->		ROUTING AREA UPDATE COMPLETE	
15	->		DETACH REQUEST	The detach is automatically re-attempted. Detach type = 'normal detach, combined PS / IMSI detach'
16	<-		DETACH ACCEPT	
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

## Specific message contents

None.

### 12.3.1.8.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step12, when a change of cell into a new routing area is performed before DETACH ACCEPT message is received by the UE, UE shall:

- abort a PS detach procedure.
- perform routing area updating procedure.

At step15, when the UE completes a routing area updating procedure, UE shall:

- re-initiate the PS detach procedure.

### 12.3.1.9 PS detach / abnormal cases / PS detach procedure collision

#### 12.3.1.9.1 Definition

#### 12.3.1.9.2 Conformance requirement

When a DETACH REQUEST is received by the UE while waiting for a DETACH ACCEPT message, the UE shall answer the network initiated PS detach procedure.

#### Reference

3GPP TS 24.008 clause 4.7.4.1.

#### 12.3.1.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

#### 12.3.1.9.4 Method of test

#### Initial condition

#### System Simulator:

One cell operating in network operation mode I.

#### User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No  
UE operation mode A Yes/No  
Switch off on button Yes/No  
Automatic PS attach procedure at switch on or power on Yes/No  
User requested combined PS and non-PS detached without powering off Yes/No

#### Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE initiates a PS detach. The SS does not answer the detach procedure, but initiates a detach procedure (cause re-attach not required). The UE shall continue with the network initiated detach procedure.

The UE deletes the logical link.

PS and CS services are not possible.

#### Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A(see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
7	->		DETACH REQUEST	Detach type = 'normal detach, combined PS / IMSI detach'
8	<-		DETACH REQUEST	Detach type = 're-attach not required'
9	->		DETACH ACCEPT	The UE answers the network initiated detach.
10	<-		DETACH ACCEPT	The SS answers the UE initiated detach.
11	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
12	UE			No response from the UE to the request. This is checked for 10 seconds.
13	<-		PAGING TYPE 1	Mobile identity = TMSI-1 Paging order is for CS services.
14	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.

#### Specific message contents

None.

#### 12.3.1.9.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, when the UE receives DETACH REQUEST message from SS before UE initiated PS detach procedure has been completed, UE shall:

- send the DETACH ACCEPT message to SS.

At step12, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step14, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

## 12.3.2 Network initiated PS detach procedure

### 12.3.2.1 PS detach / re-attach not required / accepted

#### 12.3.2.1.1 Definition

#### 12.3.2.1.2 Conformance requirement

The UE detach the IMSI for PS services.

#### Reference

3GPP TS 24.008 clause 4.7.4.2.

#### 12.3.2.1.3 Test purpose

To test the behaviour of the UE for the detach procedure.

#### 12.3.2.1.4 Method of test

#### Initial condition

##### System Simulator:

One cell operating in network operation mode II (in case of UE operation mode A).

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

##### User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The UE performs a PS attach procedure.

The SS sends a DETACH REQUEST message to the UE. The UE then deletes the logical link.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The SS is set in network operation mode II. The UE is set to either attach to PS only or both the PS and non-PS services (see ICS). The UE is powered up or switched on and initiates an attach (see ICS). The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". Attach type = 'PS attach' Mobile identity = IMSI
2		UE		
3		UE		
3a		SS		
4		->	ATTACH REQUEST	
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		
5		<-	ATTACH ACCEPT	
6		->	ATTACH COMPLETE	The SS starts integrity protection. Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
7		SS		The SS initiates a PS detach. Detach type = 're-attach not required'
8		<-	DETACH REQUEST	
9		->	DETACH ACCEPT	
9a		SS		The SS releases the RRC connection.
10		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. No response from the UE to the request except from a possible ATTACH REQUEST (UE may send an ATTACH REQUEST when the Detach type = 're-attach not required'). This is checked for 10 seconds.
11		UE		

## Specific message contents

None.

## 12.3.2.1.5 Test requirements

At step 3a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, when the UE receives the DETACH REQUEST message from SS and the detach type IE indicates 're-attach not required', the UE shall:

- send DETACH ACCEPT message to SS.

At step11, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain, except from a possible ATTACH REQUEST.

## 12.3.2.2 PS detach / rejected / IMSI invalid / PS services not allowed

### 12.3.2.2.1 Definition

### 12.3.2.2.2 Conformance requirement

- 1) If the network performs a PS detach procedure with the cause 'PS services not allowed', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.
- 2) If the network performs a PS detach procedure with the cause 'PS services not allowed' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

### Reference

3GPP TS 24.008 clause 4.7.4.2.

### 12.3.2.2.3 Test purpose

To test the behaviour of the UE if the network orders a PS detach procedure with the cause 'PS services not allowed' (no valid PS-subscription for the IMSI).

### 12.3.2.2.4 Method of test

#### Initial condition

#### System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (HPLMN, RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).  
Both cells are operating in network operation mode II.

#### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

#### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No
UE operation mode A	Yes/No
USIM removal possible without powering down	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

#### Test procedure

The SS performs a detach with the cause value 'PS services not allowed'. The SS checks that the UE does not perform PS attach in another PLMN.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 22.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
7	<-		DETACH REQUEST	Detach type = 're-attach not required' Cause = 'PS services not allowed'
8	->		DETACH ACCEPT	
9		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
10	UE			Cell B is preferred by the UE. Step 11 is only performed for UE Operation Mode A.
11	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
12				The UE initiates an attach automatically (see ICS), by MMI or AT commands.
13	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
14	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
15	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
16	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
16a	<-		AUTHENTICATION AND CIPHERING REQUEST	
16b	->		AUTHENTICATION AND CIPHERING RESPONSE	
16c	SS			The SS starts integrity protection.

17	<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
18	->	ATTACH COMPLETE	The UE is switched off or power is removed (see ICS). Message not sent if power is removed. Detach type = 'power switched off, PS detach' The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
19	UE		
20	->	DETACH REQUEST	
20a	SS		
21			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
22	UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 3 to step 18.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.3.2.2.5 Test requirements

At step4 and 15, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receives the DETACH REQUEST message (Detach type = 're-attach not required', Cause = 'PS services not allowed') from SS, UE shall:

- send DETACH ACCEPT message.

At step13, UE shall:

- not perform PS attach procedure.

#### 12.3.2.3 PS detach / IMSI detach / accepted

##### 12.3.2.3.1 Definition

##### 12.3.2.3.2 Conformance requirement

The UE detach the IMSI for PS services.

##### Reference

3GPP TS 24.008 clause 4.7.4.2.

##### 12.3.2.3.3 Test purpose

To test the behaviour of the UE for the detach procedure.



## 12.3.2.3.4 Method of test

## Initial condition

## System Simulator:

One cell operating in network operation mode I.

## User Equipment:

The UE has a valid IMSI.

## Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

## Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The SS sends a DETACH REQUEST message to the UE. The UE then performs an IMSI detach (detach for non-PS services).

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

The UE attach for non-PS services by a routing area update procedure. Both PS and CS services are possible.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	SS			The SS initiates a detach for non-PS services.
7	<-		DETACH REQUEST	Detach type = 'IMSI detach'
8	->		DETACH ACCEPT	
9	UE			The UE initiates an attach for non-PS services (see ICS).
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
11	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updating' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
12	->		ROUTING AREA UPDATE COMPLETE	
13	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
14	->		RRC CONNECTION REQUEST	
15	<-		RRC CONNECTION SETUP	
16	->		RRC CONNECTION SETUP COMPLETE	
17	->		PAGING RESPONSE	Mobile identity = TMSI-1
18	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
19	->		RRC CONNECTION RELEASE COMPLETE	
20	UE			The UE is switched off or power is removed (see ICS).
21	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
22	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

## Specific message contents

None.

### 12.3.2.3.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receives the DETACH REQUEST message with Detach type = 'IMSI detach', UE shall;

- send the DETACH ACCEPT message to SS.

At step10, after the completion of the detach procedure, UE shall;

- perform combined routing area updating procedure.

At step17, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

## 12.3.2.4 PS detach / re-attach requested / accepted

### 12.3.2.4.1 Definition

### 12.3.2.4.2 Conformance requirement

When receiving the DETACH REQUEST message and the detach type IE indicates "re-attach required", the UE shall deactivate the PDP contexts and deactivate the logical link(s), if any. The UE shall then send a DETACH ACCEPT message to the network and shall change state to GMM-DEREGISTERED. The UE shall, after the completion of the GPRS detach procedure, initiate a GPRS attach procedure. The UE should also activate PDP context(s) to replace any previously active PDP contexts.

A GPRS UE operating in UE operation mode A or B in network operation mode I, which receives an DETACH REQUEST message with detach type indicating "re-attach required" or "re-attach not required" and no cause code, is only detached for GPRS services in the network.

### Reference

3GPP TS 24.008 clause 4.7.4.2.2.

### 12.3.2.4.3 Test purpose

To test the behaviour of the UE for the detach procedure in case automatic re-attach.

### 12.3.2.4.4 Method of test

#### Initial condition

#### System Simulator:

One cell in operating in network operation mode I.

#### User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

## Related ICS/IXIT statements

Support of PS service    Yes/No  
UE operation mode A    Yes/No  
Switch off on button    Yes/No  
Automatic PS attach procedure at switch on or power on    Yes/No

## Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The SS sends a DETACH REQUEST message to the UE with cause re-attach. The UE then detaches for PS services. The UE automatically performs a new combined PS attach procedure with Attach Type “GPRS attach while IMSI attached” (for PS services) and PS and CS services are again possible.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = TMSI-1 Routing area identity = RAI-1 No new P-TMSI and P-TMSI signature assigned
5	->		ATTACH COMPLETE	
6	SS			The SS initiates a detach with re-attach.
7	<-		DETACH REQUEST	Detach type = 're-attach required', GMM cause omitted
8	->		DETACH ACCEPT	
9	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
10	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = TMSI-1 Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
11	->		ATTACH COMPLETE	
12	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
12a	->		RRC CONNECTION REQUEST	
12b	<-		RRC CONNECTION SETUP	
12c	->		RRC CONNECTION SETUP COMPLETE	
13	->		SERVICE REQUEST	service type = "paging response"
13a	<-		RRC CONNECTION RELEASE	
13b	->		RRC CONNECTION RELEASE COMPLETE	
14	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
15	->		RRC CONNECTION REQUEST	
16	<-		RRC CONNECTION SETUP	
17	->		RRC CONNECTION SETUP COMPLETE	
18	->		PAGING RESPONSE	Mobile identity = TMSI-1
19	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
20	->		RRC CONNECTION RELEASE COMPLETE	
21	UE			The UE is switched off or power is removed (see ICS).
22	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
23	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

#### 12.3.2.4.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receives DETACH REQUEST message with Detach type = 're-attach required', UE shall;

- send DETACH ACCEPT message to SS.

At step9, after UE completed PS detach procedure with Detach type = 're-attach required', UE shall:

- initiate the combined PS attach procedure with an Attach Type of either 'Combined PS / IMSI attach' or 'GPRS attach while IMSI attached'.

At step13, when the UE receives the paging message for PS domain, UE shall;

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step18, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

#### 12.3.2.5 PS detach / rejected / location area not allowed

##### 12.3.2.5.1 Definition

##### 12.3.2.5.2 Conformance requirement

- 1) If the network performs a PS detach procedure with the cause 'location area not allowed' the User Equipment shall:

1.1 not perform combined PS attach when in the same location area.

1.2 delete [any RAI or LAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number](#)  
~~the stored LAI, CKSN, TMSI, RAI, PS CKSN, P-TMSI and P-TMSI signature.~~

1.3 store the LAI [in the list of](#) ~~in~~ the 'forbidden location areas for regional provision of service'.

[1.4 delete any TMSI, LAI and ciphering key sequence number if the UE is IMSI attached and if no RRC connection exists or if the UE is operating in UE operation mode A and an RRC connection exists when the RRC connection is subsequently released.](#)

- 2) If the network performs a PS detach procedure with the cause 'location area not allowed' the User Equipment shall:

2.1 perform combined PS attach when a new location area is entered.

2.2 delete the list of forbidden LAs when power is switched off.

#### Reference

3GPP TS 24.008 clauses 4.7.4.2.

##### 12.3.2.5.3 Test purpose

To test the behaviour of the UE if the network orders the PS detach procedure with the cause 'Location Area not allowed'.

To test that the UE deletes the list of forbidden LAs when power is switched off.

#### 12.3.2.5.4 Method of test

##### Initial condition

##### System Simulator:

Three cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC2 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC1/RAC2 (RAI-7, Not HPLMN), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN).

All cells are operating in network operation mode I.

##### User Equipment:

The UE has a valid IMSI.

##### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

PS attach attempted automatically by outstanding request Yes/No

##### Test procedure

The SS orders a PS detach with the cause value 'Location Area not allowed'. The SS checks that the UE does not perform combined PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off. CS services are not possible unless an IMSI attach procedure is performed.

Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
		SS		
2		UE		The UE is set in UE operation mode A (see ICS).
3		UE		The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-2
6		->	ATTACH COMPLETE	
7		<-	DETACH REQUEST	Detach type = 're-attach not required' Cause 'Location Area not allowed'
8		->	DETACH ACCEPT	
9		UE		No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
10		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
11		UE		The UE shall not initiate an RRC connection. This is checked during 3 seconds.
12		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
13		UE		No response from the UE to the request. This is checked for 10 seconds
14		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
		SS		
15		UE		Cell B is preferred by the UE.
16		UE		The UE initiates an attach automatically, by MMI or by AT command.
17		UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds)
18		UE		No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
19		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20		UE		The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
22		UE		No response from the UE to the request. This is checked for 10 seconds



Step	Direction		Message	Comments
	UE	SS		
23		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
24	UE			Cell C is preferred by the UE. Step 25 and 26 are only performed by an UE which will not initiate a PS attach automatically (see ICS)
25 conditional	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI.
26 conditional	UE			The UE initiates an attach by MMI or AT command.
27	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
28	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-6
29	->		ATTACH COMPLETE	
30	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
31	->		RRC CONNECTION REQUEST	
32	<-		RRC CONNECTION SETUP	
33	->		RRC CONNECTION SETUP COMPLETE	
34	->		PAGING RESPONSE	Mobile identity = TMSI-1
35	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
36	->		RRC CONNECTION RELEASE COMPLETE	
37	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
38	->		RRC CONNECTION REQUEST	
39	<-		RRC CONNECTION SETUP	
40	->		RRC CONNECTION SETUP COMPLETE	
41	->		SERVICE REQUEST	service type = "paging response"
42	<-		RRC CONNECTION RELEASE	
43	->		RRC CONNECTION RELEASE COMPLETE	
44	UE			The UE is switched off or power is removed (see ICS).
45	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
45a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
46	UE			The following messages are sent and shall be received on cell B. Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
47	UE			Cell B is preferred by the UE. The UE is powered up or switched on and initiates an attach (see ICS).

Step	Direction		Message	Comments
	UE	SS		
48	UE		Registration on CS	Step 48 is only performed for non-auto attach UE. See TS34.108
49	UE			Parameter mobile identity is TMSI-1
50	->		ATTACH REQUEST	UE initiates an attach automatically (see ICS), by MMI or AT commands. Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-6
51	<-		ATTACH ACCEPT	TMSI status = valid TMSI available Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI-7
52	->		ATTACH COMPLETE	
53	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
54	->		RRC CONNECTION REQUEST	
55	<-		RRC CONNECTION SETUP	
56	->		RRC CONNECTION SETUP COMPLETE	
57	->		PAGING RESPONSE	Mobile identity = TMSI-2
58	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
59	->		RRC CONNECTION RELEASE COMPLETE	
60	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
61	->		RRC CONNECTION REQUEST	
62	<-		RRC CONNECTION SETUP	
63	->		RRC CONNECTION SETUP COMPLETE	
64	->		SERVICE REQUEST	service type = "paging response"
65	<-		RRC CONNECTION RELEASE	
66	->		RRC CONNECTION RELEASE COMPLETE	
67	UE			The UE is switched off or power is removed (see ICS).
68	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
69		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

### 12.3.2.5.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receive the DETACH REQUEST message (Detach type = 're-attach not required', Cause = 'Location Area not allowed') from SS, UE shall:

- send the DETACH ACCEPT message.

UE shall perform the following action depending on UE location.

1) UE is in the same location area.

At step9 and 18, UE shall:

- not perform location updating procedure.

At step11 and 20, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for PS domain.

At step13 and 22, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step17, UE shall;

- not perform PS attach procedure.

2) UE is in the new location area.

At step27, UE shall;

- perform the combined PS attach procedure.

At step34, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step41, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step50, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence

At step57, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step64, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

### 12.3.2.6 PS detach / rejected / No Suitable Cells In Location Area

#### 12.3.2.6.1 Definition

#### 12.3.2.6.2 Conformance requirement

1. If the network performs a PS detach procedure with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

1.1 delete the stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

1.2 store the LA in the 'forbidden location areas for roaming'.

#### Reference

3GPP TS 24.008 clauses 4.7.4.2.

### 12.3.2.6.3 Test purpose

To test the behaviour of the UE if the network sends the DETACH REQUEST message with the cause 'No Suitable Cells In Location Area'.

### 12.3.2.6.4 Method of test

#### Initial condition

#### System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

All three cells are operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

#### User Equipment:

The UE has valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS sends a DETACH REQUEST message with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall not perform combined PS attach while in the same location area on the same PLMN. The SS checks that the UE shall perform PS attach when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	<-		DETACH REQUEST	Detach type = 're-attach not required' Cause 'No Suitable Cells In Location Area'
7	->		DETACH COMPLETE	
8	UE			The following message are sent and shall be received on cell B. The UE initiates an attach automatically, by MMI or by AT command.
9	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
10	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI- 3
11	->		ATTACH COMPLETE	
12	UE			The UE is switched off or power is removed (see ICS).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
14	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

### 12.3.2.6.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the PS attach procedure.

### 12.3.2.7 PS detach / rejected / Roaming not allowed in this location area

#### 12.3.2.7.1 Definition

#### 12.3.2.7.2 Conformance requirement

- 1) If the network performs a PS detach procedure with the cause 'Roaming area not allowed in this location area' the User Equipment shall:
  - 1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.
  - 1.2 set the GPRS update status to GU3 ROAMING NOT ALLOWED.
  - 1.3 reset the attach attempt counter.
  - 1.4 store the LAI in the list of "forbidden location areas for roaming".
  - 1.5 perform a PLMN selection.
- 2) If the UE is IMSI attached via MM procedures, the UE shall in addition:
  - 2.1 delete any TMSI, LAI and ciphering key sequence number.
  - 2.2 reset the location update attempt counter.

#### Reference

3GPP TS 24.008 clauses 4.7.4.2.

#### 12.3.2.7.3 Test purpose

To test the behaviour of the UE if the network orders the PS detach procedure with the cause ' Roaming area not allowed in this location area '.

#### 12.3.2.7.4 Method of test

##### Initial condition

##### System Simulator:

Three cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC2 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC1/RAC2 (RAI-7, Not HPLMN), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN).

All cells are operating in network operation mode I.

##### User Equipment:

The UE has a valid IMSI.

##### Related ICS/IXIT statements

Support of PS service Yes/No  
UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS orders a PS detach with the cause value ' Roaming area not allowed in this location area '. The SS checks that the UE does not perform combined PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off. CS services are not possible unless an IMSI attach procedure is performed.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-2
6	->		ATTACH COMPLETE	
7	<-		DETACH REQUEST	Detach type = 're-attach not required' Cause 'Roaming not allowed in this location area '
8	->		DETACH ACCEPT	
9	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
10	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
11	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
12	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds
14		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
15	UE			Cell B is preferred by the UE.
16	UE			The UE initiates an attach automatically, by MMI or by AT command.
17	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
18	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
19	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
22	UE			No response from the UE to the request. This is checked for 10 seconds



Step	Direction		Message	Comments
	UE	SS		
23		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
24	UE			Cell C is preferred by the UE. Step 25 is only performed for non-auto attach UE.
25	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI.
26	UE			The UE initiates an attach automatically (See ICS), by MMI or AT command.
27	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
28	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-6
29	->		ATTACH COMPLETE	
30	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
31	->		RRC CONNECTION REQUEST	
32	<-		RRC CONNECTION SETUP	
33	->		RRC CONNECTION SETUP COMPLETE	
34	->		PAGING RESPONSE	Mobile identity = TMSI-1
35	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
36	->		RRC CONNECTION RELEASE COMPLETE	
37	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
38	->		RRC CONNECTION REQUEST	
39	<-		RRC CONNECTION SETUP	
40	->		RRC CONNECTION SETUP COMPLETE	
41	->		SERVICE REQUEST	service type = "paging response"
42	<-		RRC CONNECTION RELEASE	
43	->		RRC CONNECTION RELEASE COMPLETE	
44	UE			The UE is switched off or power is removed (see ICS).
45	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
45a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
46	UE			The following messages are sent and shall be received on cell B. Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
47	UE			Cell B is preferred by the UE. The UE is powered up or switched on and initiates an attach (see ICS). Step 48 is only performed for non-auto attach UE.
48	UE		Registration on CS	See TS34.108 Parameter mobile identity is TMSI-1

Step	Direction		Message	Comments
	UE	SS		
49	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
50	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-6
51	<-		ATTACH ACCEPT	TMSI status = valid TMSI available Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI-7
52	->		ATTACH COMPLETE	
53	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
54	->		RRC CONNECTION REQUEST	
55	<-		RRC CONNECTION SETUP	
56	->		RRC CONNECTION SETUP COMPLETE	
57	->		PAGING RESPONSE	Mobile identity = TMSI-2
58	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
59	->		RRC CONNECTION RELEASE COMPLETE	
60	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
61	->		RRC CONNECTION REQUEST	
62	<-		RRC CONNECTION SETUP	
63	->		RRC CONNECTION SETUP COMPLETE	
64	->		SERVICE REQUEST	service type = "paging response"
65	<-		RRC CONNECTION RELEASE	
66	->		RRC CONNECTION RELEASE COMPLETE	
67	UE			The UE is switched off or power is removed (see ICS).
68	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
69	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.3.2.7.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receive the DETACH REQUEST message (Detach type = 're-attach not required', Cause = 'Roaming not allowed in this location area') from SS, UE shall:

- send the DETACH ACCEPT message.

UE shall perform the following action depending on UE location.

1) UE is in the same location area.

At step9 and 18, UE shall:

- not perform location updating procedure.

At step11 and 20, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for PS domain.

At step13 and 22, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step17, UE shall;

- not perform PS attach procedure.

2) UE is in the new location area.

At step27, UE shall;

- perform the combined PS attach procedure.

At step34, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step41, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step50, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence

At step57, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step64, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

### 12.3.2.8 PS detach / rejected / PS services not allowed in this PLMN

#### 12.3.2.8.1 Definition

#### 12.3.2.8.2 Conformance requirement

If the network performs a PS detach procedure with the cause 'PS services not allowed in this PLMN', the UE:

1. shall delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored, shall set the PS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to section 4.1.3.2) and shall change to state GMM-DEREGISTERED.
2. shall store the PLMN identity in the "forbidden PLMNs for PS service" list.

If the network performs a PS detach procedure with the cause 'PS services not allowed in this PLMN', the UE operating in UE operation mode A in network operation mode I:

1. shall set the timer T3212 to its initial value and restart it, if it is not already running.
2. is still IMSI attached for CS services in the network.

## Reference(s):

3GPP TS 24.008 subclause 4.7.4.2.2

## 12.3.2.8.3 Test purpose

## Test purpose for Test procedure1

To test the behaviour of the UE if the network initiates a PS detach procedure with the cause "PS services not allowed in this PLMN" (for Conformance requirement1, 2).

## Test purpose for Test procedure2

To test the behaviour of the UE operating in UE operation mode A in network operation mode I if the network initiates a PS detach procedure with the cause "PS services not allowed in this PLMN" (for Conformance requirement3, 4).

## 12.3.2.8.4 Method of test

## 12.3.2.8.4.1 Test procedure1

## Initial conditions

## System Simulator:

Two cells cellA in MCC1/MNC1/LAC1/RAC1, cellB in MCC1/MNC2/LAC2/RAC1.

Both two cells are operating in network operation mode II.

The PLMN contains Cell B is equivalent to the PLMN that contains Cell A.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.](#)

## User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

## Related ICS/IXIT statement(s)

- Support of PS service Yes/No.
- UE operation mode A Yes/No
- UE operation mode C Yes/No (only if mode A not supported)..
- Switch off on button Yes/No.
- Automatic PS attach procedure at switch on or power on Yes/No.

## Test procedure

Two cells are configured.

Cell A transmits with higher power so that the UE attempts an attach procedure to cell A.

The UE initiates a PS attach procedure.

The SS sends a PS detach with the cause "PS services not allowed in this PLMN".

The SS verifies that the UE does not perform a periodic ROUTING AREA UPDATE procedure in this PLMN after the timer T3312 is expired and does not respond a paging for PS services.

Cell B transmits with high power so that the UE attempts an attach procedure to cell B.

The UE initiates a PS attach procedure.

The SS verifies that the UE performs a periodic ROUTING AREA UPDATE procedure.

## Expected sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A or C (see ICS).
2	SS			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell "
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
5	<-		AUTHENTICATION AND CIPHERING REQUEST	
6	->		AUTHENTICATION AND CIPHERING RESPONSE	
7	SS			The SS starts integrity protection.
8	<-		ATTACH ACCEPT	Attach result = ' PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Equivalent PLMNs = MCC1,MNC2 T3312 = 6minutes
9	->		ATTACH COMPLETE	
10	<-		DETACH REQUEST	Detach Type = 're-attach not required' Cause = 'PS services not allowed in this PLMN'
11	->		DETACH ACCEPT	
12	SS			The SS releases the RRC connection.
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	UE			The SS verifies that the UE does not attempt to access the network for T3312.
16		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell " (see note)
17				Cell B is preferred by the UE. Step 18 is only performed for non-auto attach UE.
18			Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
19				The UE initiates an attach automatically (See ICS), by MMI or AT command.
20	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
21	<-		AUTHENTICATION AND CIPHERING REQUEST	
22	->		AUTHENTICATION AND CIPHERING RESPONSE	
23	SS			The SS starts integrity protection.
24	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-9 T3312 = 6minutes
25	->		ATTACH COMPLETE	

26	SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
27	->	ROUTING AREA UPDATING REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature
28	<-	ROUTING AREA UPDATING ACCEPT	Routing area identity = RAI-9 No new mobile identity assigned. P-TMSI and TMSI not included. Update result = 'RA updated'
29	UE		The UE is switched off or power is removed (see ICS).
30	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off,
31	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.3.2.8.4.2 Test procedure2

### Initial conditions

System Simulator:

One cell is operating in network operation mode I: MCC1/MNC1/LAC1/RAC1.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

### Related ICS/IXIT statement(s)

- Support of PS service Yes/No.
- UE operation mode A Yes/No
- Switch off on button Yes/No.
- Automatic PS attach procedure at switch on or power on Yes/No.

### Test procedure

One cell is configured.

The UE initiates a combined attach procedure.

The SS sends a PS detach with the cause "PS services not allowed in this PLMN".

The SS verifies that the UE performs a periodic location area updating procedure after the timer T3212 is expired.

The SS verifies that the UE responds a paging for CS services.

## Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4	<-		AUTHENTICATION AND CIPHERING REQUEST	
5	->		AUTHENTICATION AND CIPHERING RESPONSE	
6	SS			The SS starts integrity protection.
7	<-		ATTACH ACCEPT	Attach result = ' Combined PS/IMSI attached ' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
8	->		ATTACH COMPLETE	
9	<-		DETACH REQUEST	Detach Type = 're-attach not required' Cause = 'PS services not allowed in this PLMN'
10	->		DETACH ACCEPT	
11				The SS releases the RRC connection
12	SS			The SS waits for the UE to expiry the timer T3212.
13	UE		Registration on CS	The UE performs a location update procedure. See TS 34.108
14	<-		PAGING TYPE1	Mobile identity = IMSI Mobile identity = IMSI Paging order is for CS services. Paging cause = "Terminating conversational call"
15	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
16	->		PAGING RESPONSE	Mobile identity = IMSI
17				The SS releases the RRC connection
18	UE			The UE is switched off or power is removed (see ICS).
19	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off'
20	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

## Specific message contents

None.

## 12.3.2.8.5 Test Requirement

## 12.3.2.8.5.1 Test Requirement for Test procedure1

At step4, when the UE is powered up or switched on, the UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step11, when the UE receives DETACH REQUEST message with the cause "PS services not allowed in this PLMN", the UE shall:

- send DETACH ACCEPT message.

At step13, when the UE receives the paging for PS services with "Mobile identity = P-TMSI-2", the UE shall;

- not respond to the paging for PS services.

At step14, when the time T3312 is expired, the UE shall:

- not attempt to access the network.

At step20, when the UE enters the different cell with the equivalent PLMN, the UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step27, when the time T3312 is expired, the UE shall:

- initiate the periodic routing area updating procedure with the information elements specified in the above Expected Sequence.

#### 12.3.2.8.5.2 Test Requirement for Test procedure2

At step3, when the UE is powered up or switched on, the UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step10, when the UE receives DETACH REQUEST message with cause "PS services not allowed in this PLMN ", the UE shall:

- send DETACH ACCEPT message.

At step12, while the SS wait for the timer T3312 to expire, the UE shall:

- not perform the periodic location area updating procedure.

At step13, when the T3212 timer is expired, the UE shall:

- initiate the periodic location area updating procedure.

At step16, when the UE receives the paging for CS services with "Mobile identity = IMSI", the UE shall;

- respond to the paging for CS services by sending the PAGING RESPONSE message.

## 12.4 Routing area updating procedure

This procedure is used to update the actual routing area of an UE in the network.

### 12.4.1 Normal routing area updating

The routing area updating procedure is a GMM procedure used by PS UEs of UE operation mode A or C that are IMSI attached for PS services only.

#### 12.4.1.1a Routing area updating / accepted

##### 12.4.1.1a.1 Definition

##### 12.4.1.1a.2 Conformance requirement

- 1) If the network accepts the routing area updating procedure and reallocates a P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.
- 2) If the network accepts the routing area updating procedure from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.



- 3) The routing area updating procedure shall also be used by a UE which is attached for PS services if a new PLMN is entered.

#### Reference

3GPP TS 24.008 clause 4.7.5, 4.7.5.1.

#### 12.4.1.1a.3 Test purpose

To test the behaviour of the UE if the network accepts the routing area updating procedure.

The following cases are identified:

- 1) P-TMSI / P-TMSI signature is reallocated.
- 2) Old P-TMSI / P-TMSI signature is not changed.

To test the behaviour of the UE if the UE enters the new PLMN.

#### 12.4.1.1a.4 Method of test

##### Initial condition

##### System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC2 (RAI-7).

All three cells are operating in network operation mode II.

The PLMN that contains cell C is equivalent to the PLMN that contains cell A.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A) in all cells.

##### User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

##### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
UE operation mode C	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

##### Test procedure

- 1) The UE sends a ROUTING AREA UPDATE REQUEST message. The SS reallocates the P-TMSI and returns ROUTING AREA UPDATE ACCEPT message with a new P-TMSI. The UE acknowledges the new P-TMSI by sending ROUTING AREA UPDATE COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. The UE will not answer signalling addressed to the old P-TMSI.
- 2) The UE sends a ROUTING AREA UPDATE REQUEST message. The SS accepts the P-TMSI and returns ROUTING AREA UPDATE ACCEPT message without any P-TMSI. Further communication UE - SS is performed by the P-TMSI.
- 3) The UE sends a ROUTING AREA UPDATE REQUEST message. The SS reallocates the P-TMSI and returns ROUTING AREA UPDATE ACCEPT message with a new P-TMSI. The UE acknowledges the new P-TMSI by sending ROUTING AREA UPDATE COMPLETE message.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note)
2		UE		The UE is set to attach to PS services only (see ICS). If that is not supported by the UE, goto step 32.
3		UE		The UE is powered up or switched on and initiates an attach (see ICS).
3a		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Equivalent PLMN: MCC = 2, MNC = 1
6		->	ATTACH COMPLETE	
6a		SS		The SS releases the RRC connection.
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7a		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
8a		SS		The SS starts integrity protection.
9		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
10		->	ROUTING AREA UPDATE COMPLETE	
11			Void	
11b			Void	
11c		SS		The SS releases the RRC connection.
11d		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
11e		SS		SS verifies that the UE transmits an RRC CONNECTION REQUEST message. SS will reject this request. The IE "Establishment cause" is not checked.
12		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
13		UE		No response from the UE to the request. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell A.

Step	Direction		Message	Comments
	UE	SS		
14		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
15	UE			Cell A is preferred by the UE.
15a		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
16		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-4
16a		SS		The SS starts integrity protection.
17		<-	ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-1 signature Routing area identity = RAI-1
17a		SS		The SS releases the RRC connection.
18		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
18a		SS		Paging cause = "Terminating interactive call". The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call"
18b			Void	
18c			Void	
19		->	SERVICE REQUEST	service type = "paging response"
19aa		SS		The SS starts integrity protection.
19a		SS		The SS releases the RRC connection. The following messages are sent and shall be received on cell C.
20		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell C to the "Serving cell". (see note)
21	UE			Cell C is preferred by the UE.
22		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
23		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-1
24		SS		The SS starts integrity protection.
25		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-3 P-TMSI-3 signature Routing area identity = RAI-7
26		->	ROUTING AREA UPDATE COMPLETE	
27		SS		The SS releases the RRC connection.
28	UE			The UE is switched off or power is removed (see ICS).
29		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
30		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
31		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Step	Direction		Message	Comments
	UE	SS		
32	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 3 to step 31.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.4.1.1a.5 Test requirements

At step 3a, 7a, 15a and 22 the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 18a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Terminating Interactive Call".

At step 29 the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step13, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- not respond to the paging message for PS domain.

At step16, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step19, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step23, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

#### 12.4.1.1b Routing area updating / accepted / Signalling connection re-establishment

##### 12.4.1.1b.1 Definition

##### 12.4.1.1b.2 Conformance requirement

When the UE receives an indication from the lower layers that the RRC connection has been released with cause "Directed signalling connection re-establishment", then the UE shall enter PMM-IDLE mode and initiate immediately a normal routing area update procedure (the use of normal or combined procedure depends on the network operation mode in the current serving cell) regardless whether the routing area has been changed since the last update or not.

## Reference

3GPP TS 24.008 clause 4.7.2.5, 4.7.5.1

## 12.4.1.1b.3 Test purpose

To test the behaviour of the UE if the UE receives a RRC CONNECTION RELEASE message with cause = "Directed signalling connection re-establishment".

## 12.4.1.1b.4 Method of test

## Initial condition

## System Simulator:

One cell(Cell A) in MCC1/MNC1/LAC1/RAC1 (RAI-1) operating in network operation mode I. ATT flag is set to 0.

## User Equipment:

The UE has a valid TMSI, P-TMSI-1 and RAI-1

## Related ICS/IXIT statements

Support of PS service Yes/No  
 UE operation mode A Yes/No  
 UE operation mode C Yes/No  
 Switch off on button Yes/No  
 Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

- a) The UE initiates a Service request procedure in order to establish the PS signalling connection for the upper layer signalling.
- b) After the Service request procedure is complete, the SS sends the RRC CONNECTION RELEASE message with cause = "Directed signalling connection re-establishment" to the UE.
- c) After the UE release the RRC connection, the UE initiate immediately a normal routing area update procedure.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
7	->		SERVICE REQUEST	Service type = "signalling",

Step	Direction		Message	Comments
	UE	SS		
8	<-		AUTHENTICATION AND CIPHERING REQUEST	
9	->		AUTHENTICATION AND CIPHERING RESPONSE	
10		SS		The SS starts integrity protection.
11		SS		The SS releases the RRC connection, using Release cause=Directed Signalling Connection Re-establishment
12			Void	
13		SS		SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Call re-establishment".
14			Void	
15			Void	
16	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-1
17	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
18	->		ROUTING AREA UPDATE COMPLETE	
19		UE		The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
21		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

#### Specific message contents

None.

#### 12.4.1.1b.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step16, UE shall;

- initiate the routing area updating procedure whether the routing area has been changed since the last update or not.

#### 12.4.1.1c Routing Area Updating / accepted / change of DRX parameter IE

##### 12.4.1.1c.1 Definition

##### 12.4.1.1c.2 Conformance requirement

The routing area updating procedure is used for updating the network with a new DRX parameter IE when the content of the IE has changed.

NOTE 1: Such changes can be used e.g. when the UE activates a PDP context with service requirements that cannot be met with the current DRX parameter. As PDP context(s) are activated and deactivated, the GMM context will be updated with an appropriate DRX parameter;

If the ROUTING AREA UPDATE REQUEST message was used to update a network with the new DRX parameter IE, the UE shall start using the new DRX parameter upon receipt of the ROUTING AREA UPDATE ACCEPT message.

Reference:

3GPP TS 24.008 subclause 4.7.5.1

#### 12.4.1.1c.3 Test purpose

To test the behaviour of the UE when the UE enters a cell with a different value of DRX parameter.

#### 12.4.1.1c.4 Method of test

Initial conditions

System Simulator:

Two cells are set to the same RAI (RAI-1).

Cell A: the value of the DRX parameter "CN domain specific DRX cycle length coefficient" is set to 8.

Cell B: the value of the DRX parameter "CN domain specific DRX cycle length coefficient" is set to 7.

Both two cells are operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.](#)

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

Related ICS/IXIT statement(s)

- Support of PS service Yes/No.
- UE operation mode A Yes/No
- UE operation mode C Yes/No (only if mode A not supported.)
- Switch off on button Yes/No.
- Automatic PS attach procedure at switch on or power on Yes/No.

Test procedure

Two cells are configured.

Cell A is set to the "Serving cell" in order that the UE initiates an attach procedure to cell A.

The SS verifies that the UE performs a PS attach procedure.

Cell B is set to the "Serving cell" and cell A is set to the "Suitable neighbour cell".

The SS verifies that the UE performs a routing area updating procedure when cell B with the different value of DRX parameter is entered.

The SS verifies that the UE responds to a paging for PS domain.

## Expected sequence

Step	Direction		Message	Comments
	UE	SS		
	SS			The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A or C (see ICS).
2	SS			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell "
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
5	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
6	<-		AUTHENTICATION AND CIPHERING REQUEST	
7	->		AUTHENTICATION AND CIPHERING RESPONSE	
8	SS			The SS starts integrity protection.
9	<-		ATTACH ACCEPT	Attach result = ' PS only attached' No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1
10	SS			The SS releases the RRC connection The following messages are sent and shall be received on CellB.
11	SS			Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
12	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
13	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-1 CN domain specific DRX cycle length coefficient = 7
14	SS			The SS starts integrity protection.
15	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1
16	SS			The SS releases the RRC connection.
17	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
18	SS			SS verifies that the UE transmits an RRC CONNECTION REQUEST message. SS will reject this request. The IE "Establishment cause" is not checked.
19	UE			The UE is switched off or power is removed (see ICS).
20	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
21	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
22	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.



NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

### Specific message contents

#### System Information Block type 1 (cell A)

<ul style="list-style-type: none"> <li>- CN domain system information</li> <li>- CN domain identity</li> <li>- CHOICE CN Type</li> <li>- CN domain specific NAS system information</li> <li>- GSM-MAP NAS system information</li> <li>- CN domain specific DRX cycle length coefficient</li> </ul>	PS GSM-MAP  05 00H 8
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#### System Information Block type 1 (cell B)

<ul style="list-style-type: none"> <li>- CN domain system information</li> <li>- CN domain identity</li> <li>- CHOICE CN Type</li> <li>- CN domain specific NAS system information</li> <li>- GSM-MAP NAS system information</li> <li>- CN domain specific DRX cycle length coefficient</li> </ul>	PS GSM-MAP  05 00H 7
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#### 12.4.1.1c.5 Test Requirement

At step5, when the UE is powered up or switched on, the UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step13, the UE shall:

- initiate the routing area updating procedure with the new value of DRX parameter.

At step 18, the SS sends the paging message for PS domain, the UE shall

- respond to the paging message for PS domain.

#### 12.4.1.2 Routing area updating / rejected / IMSI invalid / illegal ME

##### 12.4.1.2.1 Definition

##### 12.4.1.2.2 Conformance requirement

- 1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.
- 2) If the network rejects a routing area updating procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

##### Reference

3GPP TS 24.008 clause 4.7.5.1.

##### 12.4.1.2.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'Illegal ME'.

## 12.4.1.2.4 Method of test

## Initial condition

## System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).

All three cells are operating in network operation mode II (in case of UE operation mode A)

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.](#)

## User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The SS rejects a routing area updating with the cause value 'Illegal ME'. The SS checks that the UE does not perform PS attach in the same or another PLMN.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following messages are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	<del>UE</del>		<del>Registration on CS</del> <a href="#">Void</a>	<del>See TS 34.108</del> <del>This is applied only for UE in UE operation mode A.</del>
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection. No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'PS only attached' Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	
6	SS			The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating'
9	<-		ROUTING AREA UPDATE REJECT	Routing area identity = RAI-1 GMM cause = 'Illegal ME'
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.
12	SS			The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
13	UE			Cell C is preferred by the UE.
14	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
15	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
16	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).

16a			Step 16b is only performed by UE in operation mode A
16b	UE	Registration on CS	See TS 34.108
17	->	ATTACH REQUEST	Parameter mobile identity is IMSI. Attach type = 'PS attach'
17a	<-	AUTHENTICATION AND CIPHERING REQUEST	Mobile identity = IMSI
17b	->	AUTHENTICATION AND CIPHERING RESPONSE	
17c	SS		The SS starts integrity protection.
18	<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
19	->	ATTACH COMPLETE	
20	UE		The UE is switched off or power is removed (see ICS).
21	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
22	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.4.1.2.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step11, after the routing area updating procedure is rejected with GMM cause = 'Illegal ME', UE shall;

- not respond to the paging message for PS domain.

At step14, UE shall,

- not initiate PS attach procedure.

At step17, after the UE is powered up or USIM is replaced, UE shall;

- initiate the PS attach procedure.

#### 12.4.1.3 Routing area updating / rejected / UE identity cannot be derived by the network

##### 12.4.1.3.1 Definition

##### 12.4.1.3.2 Conformance requirement

If the network rejects a routing area updating procedure from the User Equipment with the cause 'UE identity cannot be derived by the network', the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Depending on the manufacturer the UE may or may not perform a PS attach procedure.

#### Reference

3GPP TS 24.008 clause 4.7.5.1.

#### 12.4.1.3.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'UE identity cannot be derived by the network'.

#### 12.4.1.3.4 Method of test

#### Initial condition

##### System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).

Both cells are operating in network operation mode II (in case of UE operation mode A).

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.](#)

##### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Automatic attach procedure when UE identity cannot be derived by the network Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS rejects a normal routing area updating with the cause value 'UE identity cannot be derived by the network'. The UE detach locally. A new PS attach may be performed.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'UE identity cannot be derived by the network'
11	UE			If an automatic attach procedure by the UE is not possible when the UE identity cannot be derived by the network (see ICS) goto step 19.
12	UE			An Automatic PS attach procedure is initiated (see ICS).
13	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
13a	<-		AUTHENTICATION AND CIPHERING REQUEST	
13b	->		AUTHENTICATION AND CIPHERING RESPONSE	
13c	SS			The SS starts integrity protection.
14	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
15	->		ATTACH COMPLETE	
16	UE			The UE is switched off or power is removed (see ICS).
17	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
18	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Step	Direction		Message	Comments
	UE	SS		
19		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services. No response from the UE to the request, as the UE has detached locally. This is checked for 10 seconds.
20	UE			
NOTE: The definitions for "Non-Suitable cell", Suitable neighbour cell and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.4.1.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the implementation of the UE.

Case 1) UE supports an Automatic PS attach procedure.

At step13, UE shall;

- initiate the PS attach procedure.

Case 2) UE does not support an Automatic PS attach procedure.

At step20, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

#### 12.4.1.4a Routing area updating / rejected / location area not allowed

##### 12.4.1.4a.1 Definition

##### 12.4.1.4a.2 Conformance requirement

- 1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:
  - 1.1 not perform PS attach when in the same location area.
  - 1.2 delete the stored RAI, PS-CKSN, P-TMSI, P-TMSI signature and TMSI, LAI and ciphering key sequence number.
  - 1.3 store the LA in the 'forbidden location areas for regional provision of service'.
  - 1.4 not delete the list of "equivalent PLMNs".
  - 1.5 perform a cell selection.
- 2) If the network rejects a routing area updating procedure from the User Equipment with the cause 'location area not allowed' the User Equipment:
  - 2.1 may perform routing area update when a new location area is entered.

2.2 shall delete the list of forbidden LAs after switch off (power off).

#### Reference

3GPP TS 24.008 clauses 4.7.5.1.

#### 12.4.1.4a.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'Location Area not allowed'.

To test that the UE deletes the list of forbidden LAs when power is switched off.

#### 12.4.1.4a.4 Method of test

#### Initial condition

#### System Simulator:

Four cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) , cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell D in MCC2/MNC1/LAC2/RAC1(RAI-6).

All four cells are operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.](#)

The PLMN contains Cell D is equivalent to the PLMN that contains Cell C.

#### User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS rejects a routing area updating with the cause value 'Location Area not allowed'. The SS checks that the UE does not perform PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off.

Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.



## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". Set the cell type of cell D to the "Non-Suitable cell".
2		SS		(see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 33.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell C is preferred by the UE.
3a	UE		Registration on CS Void	See TS 34.108 This is applied only for UE in UE operation mode A.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-3 Equivalent PLMNs = MCC2,MNC1
6	->		ATTACH COMPLETE	
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell".
8		SS		(see note)
8a		SS		Cell B is preferred by the UE.
8a		SS		The following step is only performed for UE Operation Mode A.
8b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-3
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Location Area not allowed'
11	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
12	UE			No response from the UE to the request. This is checked for 10 seconds.
13		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell".
13a	UE			(see note)
13a	UE			The UE performs cell selection.
14	UE			Cell A is preferred by the UE.
15	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)

Step	Direction		Message	Comments
	UE	SS		
16		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
16a	UE			The UE performs cell selection.
17	UE			Cell D is preferred by the UE. The following messages are sent and shall be received on cell D.
17a				The following step is only performed for UE Operation Mode A.
17b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
	UE			The UE initiates a PS attach either automatically or manually (see ICS).
18	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
19	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-6
20	->		ATTACH COMPLETE	
21	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
22	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
22a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
23	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
24	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-2 Routing area identity = RAI-3
24a	<-		AUTHENTICATION AND CIPHERING REQUEST	
24b	->		AUTHENTICATION AND CIPHERING RESPONSE	
24c	SS			The SS starts integrity protection.
25	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6
26	->		ATTACH COMPLETE	
27		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell D to the "Non-Suitable cell". (see note)
28				Cell A is preferred by the UE.
28a				The following step is only performed for UE Operation Mode A.
28b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
29	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-3
30	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included.Update result = 'RA updated'  Routing area identity = RAI-1

Step	Direction		Message	Comments
	UE	SS		
31	UE		DETACH REQUEST	The UE is switched off or power is removed (see ICS). Message not sent if power is removed. Detach type = 'power switched off, PS detach'
32	->			
32a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
33		SS		The SS is set in network operation mode II. The UE is set in UE operation mode A (see ICS), cell A is switched off and the test is repeated from step 3 to step 32.
34		UE		
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.4.1.4a.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step12, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step12 and 15, when in the same location area, UE shall

- not perform PS attach procedure.

At step18, when a new location area is entered, UE shall

- perform the PS attach procedure.

At step24, when the USIM is replaced , UE shall;

- perform the PS attach procedure.

At step29, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

#### 12.4.1.4b Routing area updating / rejected / No Suitable Cells In Location Area

##### 12.4.1.4b.1 Definition

##### 12.4.1.4b.2 Conformance requirement

- 1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

- 1.1 store the LA identity in the 'forbidden location areas for roaming'.

1.2 search for a suitable cell in a different location area on the same PLMN.

1.3 not delete equivalent PLMNs list.

1.4 not delete the MM and GMM contexts

## Reference

3GPP TS 24.008 clauses 4.7.5.1.

### 12.4.1.4b.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure with the cause 'No Suitable Cells In Location Area'.

To test that the UE deletes the list of forbidden LAs when power is switched off'.

### 12.4.1.4b.4 Method of test

## Initial condition

### System Simulator:

Four cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell D in MCC1/MNC1/LAC1/RAC2 (RAI-4),

All four cells are operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.](#)

The PLMNs of cells A, B, C and D are all equivalent.

### User Equipment:

The UE has valid IMSI.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The SS rejects a routing area updating with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall perform PS attach procedure when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following message are sent and shall be received on cell D. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Serving cell". (see note)
		SS		
2		UE		The UE is powered up or switched on and initiates an attach (see ICS). Cell D is preferred by the UE.
3		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 Equivalent PLMNs = MCC2,MNC1
5		->	ATTACH COMPLETE	
6		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C Cell A is preferred by the UE.
7		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-4
8		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'No Suitable Cells In Location Area'
9		->	ROUTING AREA UPDATE REQUEST	The following message are sent and shall be received on cell B. Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-4
10		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-3
11		->	ROUTING AREA UPDATE COMPLETE	
12		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
13		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

#### 12.4.1.4b.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, UE shall;

- initiate the routing area updating procedure.

At step9, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the routing area updating procedure.

#### 12.4.1.4c Routing area updating / rejected / PS services not allowed in this PLMN

##### 12.4.1.4c.1 Definition

##### 12.4.1.4c.2 Conformance requirement

If the network rejects a routing area updating procedure from the User Equipment with the cause 'PS service not allowed in this PLMN', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.
- shall set the PS update status to GU3 ROAMING NOT ALLOWED.
- store the PLMN identity in the "forbidden PLMNs for PS service" list.
- not delete the equivalent PLMN list.

UE shall perform the following actions depending on the update type, UE operation mode and network operation mode.

1) UE is in UE operation mode C

UE shall perform a PLMN selection instead of a cell selection.

2) UE is in UE operation mode A, update type = periodic updating and Network is in network operation mode I

UE shall set the timer T3212 to its initial value and restart it, if it is not already running.

3) UE is in UE operation mode A and Network is in network operation mode II.

UE shall be still IMSI attached for CS services in the network.

#### Reference

3GPP TS 24.008 clause 4.7.5.1.

##### 12.4.1.4c.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'PS services not allowed in this PLMN'.

##### 12.4.1.4c.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).

All three cells are operating in network operation mode II (in case of UE operation mode A).

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.](#)

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

#### User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

The UE is in UE operation mode C.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure 1

The SS rejects a routing area updating with the cause value 'PS services not allowed in this PLMN'. The SS checks that the UE performs PLMN selection.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following messages are sent and shall be received on cell A.
2	SS			The UE is set in UE operation mode C (see ICS).
				The SS is set in network operation mode II.
				Set the cell type of cell A to the "Serving cell".
				Set the cell type of cell B to the "Non-Suitable cell".
				Set the cell type of cell C to the "Non-Suitable cell".
				(see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included. Attach result = 'PS only attached' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
6	SS			The following messages are sent and shall be received on cell B.
				Set the cell type of cell A to the " Suitable neighbour cell ".
				Set the cell type of cell B to the "Serving cell".
				(see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating'
				Routing area identity = RAI-1
9	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'PS services not allowed in this PLMN'
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.
12	SS			Set the cell type of cell B to the "Non-Suitable cell".
				Set the cell type of cell A to the "Serving cell".
				(see note)
13	UE			The UE performs PLMN selection.
14	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
12	SS			Set the cell type of cell A to the "Non-Suitable cell".
				Set the cell type of cell C to the "Serving cell".
				(see note)
17	->		ATTACH REQUEST	Update type = 'PS attach' Mobile identity = IMSI
17a	<-		AUTHENTICATION AND CIPHERING REQUEST	
17b	->		AUTHENTICATION AND CIPHERING RESPONSE	
17c	SS			The SS starts integrity protection.



18	<-	ATTACH ACCEPT	Update result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
19	->	ATTACH COMPLETE	The UE is switched off or power is removed (see ICS).
20	UE		
21	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
22	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

### Test procedure2

### Initial condition

System Simulator:

One cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) operating in network operation mode I.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

The UE is in UE operation mode A.

### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

### Test procedure

The UE initiates a PS attach procedure with identity P-TMSI. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. A routing area updating procedure is performed at T3312 timeout. The SS rejects a routing area updating with the cause value 'PS services not allowed in this PLMN'. The UE sets the timer T3212 to its initial value and restart it, if it is not already running.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
5	->		ATTACH COMPLETE	
6	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1
7	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'PS services not allowed in this PLMN'
8	SS			The SS verifies that the time between the attach and the periodic RA updating is T3312
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'PS services not allowed in this PLMN'
11	UE			The UE is switched off or power is removed (see ICS).
12	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
13	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

## Specific message contents

None.

## 12.4.1.4c.5 Test requirements

## Test requirement for Test procedure1

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step11, after the routing area updating procedure is rejected with GMM cause = 'PS service not allowed in this PLMN', UE shall;

- not respond to the paging message for PS domain.

At step13, UE shall,

- initiate PLMN selection.

At step17, UE shall;

- initiate the PS attach procedure.

Test requirement for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step6, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step7, after the routing area updating procedure is rejected with GMM cause = 'PS service not allowed in this PLMN', UE shall;

- set the timer T3212 to its initial value and restart it.

At step8, UE shall,

- not initiate periodic routing area updating procedure.

At step9, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step10, after the routing area updating procedure is rejected with GMM cause = 'PS service not allowed in this PLMN', UE shall;

- set the timer T3212 to its initial value and restart it.

At step11, UE shall,

- not initiate periodic routing area updating procedure.

#### 12.4.1.4d Routing area updating / rejected / Roaming not allowed in this location area

##### 12.4.1.4d.1 Definition

##### 12.4.1.4d.2 Conformance requirement

- 1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment:
  - 1.1 shall not perform PS attach when in the same location area.
  - 1.2 shall store the LA in the 'forbidden location areas for roaming'.
  - 1.3 shall perform a routing area updating when entering into a new location area if the LAI or the PLMN identity is not contained in any of the lists "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" or "forbidden PLMNs" and the current status is different from "IDLE NO IMSI".
- 2) The User Equipment shall erase the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.

## References

3GPP TS 24.008 clause 4.7.5.1.4.

3GPP TS 23.122 clause 4.5.2.

3GPP TS 24.008 clause 4.4.1.

### 12.4.1.4d.3 Test purpose

#### Test purpose1

To test that on receipt of a rejection using the 'Roaming not allowed in this area' cause code, the UE ceases trying a routing area updating procedure on that location area. Successful routing area updating procedure is possible in other location areas.

#### Test purpose2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

### 12.4.1.4d.4 Method of test

#### 12.4.1.4d.4.1 Test procedure1

## Initial condition

### System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6).  
Both cells are operating in network operation mode II.

### User Equipment:

The UE has a valid IMSI.

## Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

## Test procedure

The SS rejects a routing area updating with the cause value 'Roaming not allowed in this area'. A new attempt for a PS attach is not possible. Successful PS attach procedure is performed in another location area. The UE is moved back to the 1<sup>st</sup> location area. A routing area updating shall not be performed, as the LA is on the forbidden list.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
4	->		ATTACH REQUEST	SS allocates Mobile identity = TMSI-1. Attach type = ' PS attach ' Mobile identity =IMSI TMSI status = no valid TMSI available
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2
6	->		ATTACH COMPLETE	
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " Non-suitable cell ". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE.
9	->		ROUTING AREA UPDATE REQUEST	Parameter mobile identity is TMSI-1. Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-2
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this area'
11	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
18	UE			Cell A is preferred by the UE.
19	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE.
20			Void	Parameter mobile identity is TMSI-1.

Step	Direction		Message	Comments
	UE	SS		
21	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Mobile identity = P-TMSI-2
21a	<-		AUTHENTICATION AND CIPHERING REQUEST	
21b	->		AUTHENTICATION AND CIPHERING RESPONSE	
21c		SS		The SS starts integrity protection.
22	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
23	->		ROUTING AREA UPDATE COMPLETE	
24	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
25			Void	
26			Void	
27			Void	
28	->		PAGING RESPONSE	Mobile identity = TMSI-1
29	SS			The SS releases the RRC connection.
30			Void	
31	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
32			Void	
33			Void	
34			Void	
35	->		SERVICE REQUEST	service type = "paging response"
36	SS			The SS releases the RRC connection.
37			Void	
38		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
39		UE		No ROUTING AREA UPDATE REQUEST sent to SS (SS waits 30 seconds).
40	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
41		UE		No response from the UE to the request. This is checked for 10 seconds.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

## 12.4.1.4d.4.2 Test procedure2

## Initial condition

## System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6). Both cells are operating in network operation mode II.

## User Equipment:

The UE has a valid IMSI. UE is Idle Updated on cell A.

## Related ICS/IXIT statements

Support of PS service Yes/No  
UE operation mode A Yes/No

USIM removal possible without powering down Yes/No  
Switch off on button Yes/No  
Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS rejects a routing area updating with the cause value 'Roaming not allowed in this area'. The UE is switched off for 10 seconds and switched on again. The SS checks that a PS attach is possible on the cell on which the previous routing area updating had been rejected.

If USIM removal is possible without switching off:

The SS rejects a routing area updating with the cause value 'Roaming not allowed in this area'. The USIM is removed and inserted in the UE. The SS checks that a PS attach procedure and routing area updating procedure is possible on the cell on which the routing area updating had previously been rejected.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
		SS		
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	UE		Registration on CS	See TS34.108
4	->		ATTACH REQUEST	Parameter mobile identity is IMSI SS allocates Mobile identity = TMSI-1. Attach type = ' PS attach ' Mobile identity =IMSI TMSI status = no valid TMSI available
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2
6	->		ATTACH COMPLETE	
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE.
9	->		ROUTING AREA UPDATE REQUEST	Parameter mobile identity is TMSI-1. Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-2
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this area'
11	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
18	UE			The UE gets the USIM replaced, is powered up or switched on.
19	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE.
20	UE			The UE initiates an attach automatically (see ICS) by MMI or AT command.



Step	Direction		Message	Comments
	UE	SS		
21	->		ATTACH REQUEST	Attach type = ' PS attach ' Mobile identity =P-TMSI-2
22a	<-		AUTHENTICATION AND CIPHERING REQUEST	
22b	->		AUTHENTICATION AND CIPHERING RESPONSE	
22c	SS			The SS starts integrity protection.
22	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6 Mobile identity = TMSI-1
23	->		ATTACH COMPLETE	
24	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
25			Void	
26			Void	
27			Void	
28	->		PAGING RESPONSE	Mobile identity = TMSI-1
29	SS			The SS releases the RRC connection.
30			Void	
31	<-		PAGING TYPE1	Mobile identity = P-TMSI-1
32			Void	
33			Void	
34			Void	
35	->		SERVICE REQUEST	service type = "paging response"
36	SS			The SS releases the RRC connection.
37			Void	
38	UE			The UE is switched off or power is removed (see ICS).
39	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
40	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.4.1.4d.5 Test requirements

##### Test requirements for Test procedure1

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the routing area update procedure with the information elements specified above Expected Sequence

At step12, when the SS rejects the routing area update procedure with GMM cause = 'Roaming not allowed in this area', UE shall:

- not initiate a PS attach procedure.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step21, UE shall:

- initiate the routing area update procedure.

At step28, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step35, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step41, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

#### Test requirements for Test procedure2

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area update procedure with the information elements specified above Expected Sequence.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step21, UE shall:

- initiate the PS attach procedure.

At step28, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step35, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

#### 12.4.1.5 Routing area updating / abnormal cases / attempt counter check / miscellaneous reject causes

##### 12.4.1.5.1 Definition

##### 12.4.1.5.2 Conformance requirement

When a routing area updating procedure is rejected with the attempt counter less than five, the UE shall repeat the routing area updating procedure after T3330 timeout.

When a T3330 timeout has occurred during a routing area updating procedure with the attempt counter five, the UE shall start timer T3302.

When the T3302 expire, a new routing area updating procedure shall be initiated.

#### Reference

3GPP TS 24.008 clause 4.7.5.1.

#### 12.4.1.5.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

#### 12.4.1.5.4 Method of test

#### Initial condition

##### System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). The ATT-flag shall indicate that the MS should use IMSI attach/detach procedures.

Both cells are operating in network operation mode II (in case of UE operation mode A).

##### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

#### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No
UE operation mode A	Yes/No (only if mode C not supported)
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

#### Test procedure

The UE initiates a routing area updating procedure (attempt counter zero).

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter one) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter two) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter three) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter four) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure with attempt counter five (after T3311 expires).

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE shall not perform a new successful routing area updating procedure after T3311 seconds.

The UE initiates a routing area updating procedure with attempt counter zero after T3302 expires with the stored P-TMSI, P-TMSI signature, PS CKSN and RAI.

T3302; set to 12 minutes.

T3330; set to 15 seconds.

T3311; set to 15 seconds.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
2	UE			The UE is set in UE operation mode C (see ICS).
2a		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2a	UE		Registration on CS	See TS 34.108 This step is applied only for UE in UE operation mode A.
3	UE			Parameter mobile identity is TMSI. The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'PS only attached' P-TMSI-2 signature Routing area identity = RAI-1
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7		SS		Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
9	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
10		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating'  P-TMSI-2 signature Routing area identity = RAI-1
12	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
13		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
14	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating'  P-TMSI-2 signature Routing area identity = RAI-1
15	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
16		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
17	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
18	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'

Step	Direction		Message	Comments
	UE	SS		
19		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
20	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating'
21	<-		ROUTING AREA UPDATE REJECT	P-TMSI-2 signature Routing area identity = RAI-1 GMM cause = 'Congestion'
22		SS		The SS verifies that the UE does not attempt to attach for 10 minutes .
23		SS		The SS shall release the PS signalling connection.
23a		UE	Registration on CS	See TS 34.108 This step is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI.
24	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating'
25	<-		ROUTING AREA UPDATE ACCEPT	P-TMSI-2 signature Routing area identity = RAI-1 Update result = 'RA updated' Mobile identity = P-TMSI-2 P-TMSI-3 signature Routing area identity = RAI-4
26	->		ROUTING AREA UPDATE COMPLETE	
27		UE		The UE is switched off or power is removed (see ICS).
28	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach' An IMSI Detach must be performed for an UE in Operation Mode A either before or after the PS Detach
29		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.4.1.5.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

- perform the routing area updating procedure.

UE shall perform the following actions depending on the conditions described below.

Case 1) At step11, 14, 17 and 20, a routing area updating procedure is rejected from SS with the attempt counter less than five,

UE shall:

- repeat the routing area updating procedure after T3330 timeout

Case2) At step22 a routing area updating procedure is rejected from SS with the attempt counter five

At step22, UE shall:

- not initiate a routing area updating procedure.

Case3) At step24, the T3302 expires

UE shall:

- initiate the new routing area updating procedure

#### 12.4.1.6 Routing area updating / abnormal cases / change of cell into new routing area

##### 12.4.1.6.1 Definition

##### 12.4.1.6.2 Conformance requirement

When a change of cell into a new routing area is performed before the routing area updating procedure is finished, the UE shall abort the routing area updating procedure and re-initiate it in the new routing area.

##### Reference

3GPP TS 24.008 clause 4.7.5.1.

##### 12.4.1.6.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

##### 12.4.1.6.4 Method of test

##### Initial condition

##### System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) and cell C In MCC1/MNC1/LAC1/RAC3 (RAI-5).

All cells are operating in network operation mode II (in case of UE operation mode A).

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.](#)

##### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

##### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

##### Test procedure

The UE initiates a routing area updating procedure. The ROUTING AREA UPDATE ACCEPT message is delayed from the SS. The UE performs a cell update into a new routing area. The UE shall re-initiate a routing area updating procedure in the new routing area.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 18.
3		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
4	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
6		->	ATTACH COMPLETE	
7		SS		The following messages are sent and shall be received on cell B.
8		SS		Set the cell type of cell A to the "Suitable neighbour cell".
9		->	ROUTING AREA UPDATE REQUEST	Set the cell type of cell B to the "Serving cell". (see note) Cell B is preferred by the UE.
10		SS		Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
11		SS		No response to the ROUTING AREA UPDATE REQUEST message is given by the SS
12		SS		The following messages are sent and shall be received on cell C.
13		->	ROUTING AREA UPDATE REQUEST	Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Serving cell". (see note) Cell C is preferred by the UE.
14		<-	ROUTING AREA UPDATE ACCEPT	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
15		->	ROUTING AREA UPDATE COMPLETE	Update result = 'RA updated' Mobile identity = P-TMSI-2 P-TMSI-3 signature Routing area identity = RAI-5
16	UE			The UE is switched off or power is removed (see ICS).
17		->	DETACH REQUEST	Message not sent if power is removed.
17a		SS		Detach type = 'power switched off, PS detach' The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.



18 19	SS UE		The SS is set in network operation mode II. The UE is set in UE operation mode A (see ICS). Set the cell type of cell C to the "Non-Suitable cell". The test is repeated from step 2 to step 17.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.4.1.6.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area update procedure.

At step13, when change of cell into a new routing area is performed before the routing area updating procedure is finished, UE shall:

- abort the routing area updating procedure.
- re-initiate new routing area updating procedure in the new routing area.

#### 12.4.1.7 Routing area updating / abnormal cases / change of cell during routing area updating procedure

##### 12.4.1.7.1 Definition

##### 12.4.1.7.2 Conformance requirement

When a change of cell within a new routing area is performed before the routing area updating procedure is finished, the UE shall perform the cell update before the routing area updating procedure is finished.

##### Reference

3GPP TS 24.008 clause 4.7.5.1.

##### 12.4.1.7.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

##### 12.4.1.7.4 Method of test

##### Initial condition

##### System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) and cell C in MCC1/MNC1/LAC1/RAC2 (RAI-4).

All three cells are operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.](#)

##### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

#### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

#### Test procedure

The UE initiates a routing area updating procedure. The ROUTING AREA UPDATE ACCEPT message is delayed from the SS. The UE performs a cell update within the routing area. The UE then waits for the ROUTING AREA UPDATE ACCEPT message.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
2	UE			The UE is set in UE operation mode C (see ICS).
3		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
4	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach result = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection. No new mobile identity assigned. P-TMSI not included. Attach result = 'PS only attached' P-TMSI-2 signature Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7		SS		Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
9		SS		No response to the ROUTING AREA UPDATE REQUEST message is given by the SS
10		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Serving cell". (see note)
11		SS		Cell C is preferred by the UE.
12a	->		CELL UPDATE	Cell update cause = 'cell reselection'
12b	<-		CELL UPDATE CONFIRM	
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-2 P-TMSI-3 signature Routing area identity = RAI-4
14	->		ROUTING AREA UPDATE COMPLETE	
15	UE			The UE is switched off or power is removed (see ICS).
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
17		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".
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#### Specific message contents

None.

#### 12.4.1.7.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

- initiate routing area update procedure.

At step12a, when a change of cell within a new routing area is performed, UE shall:

- perform the cell update before the routing area updating procedure is finished.

#### 12.4.1.8 Routing area updating / abnormal cases / P-TMSI reallocation procedure collision

##### 12.4.1.8.1 Definition

##### 12.4.1.8.2 Conformance requirement

When a P-TMSI REALLOCATION COMMAND message is received by the UE while waiting for a ROUTING AREA UPDATE ACCEPT message, the UE shall ignore the P-TMSI reallocation procedure and continue with the routing area updating procedure.

#### Reference

3GPP TS 24.008 clause 4.7.5.1.

##### 12.4.1.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

##### 12.4.1.8.4 Method of test

#### Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).

Both cells are operating in network operation mode II (in case of UE operation mode A).

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.](#)

User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No
UE operation mode A	Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The UE initiates a routing area updating procedure. The SS does not answer the routing area updating procedure, but initiates a P-TMSI reallocation procedure. The UE shall ignore the P-TMSI reallocation procedure and continue with the routing area updating procedure.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
2	UE			The UE is set in UE operation mode C (see ICS).
3		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
4	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach result = 'PS attach' Mobile identity = IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
8		SS		Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-1
10	<-		P-TMSI REALLOCATION COMMAND	Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
11	UE			The UE ignores the P-TMSI reallocation command.
12	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-4
13	->		ROUTING AREA UPDATE COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
16		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

## Specific message contents

None.

#### 12.4.1.8.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area updating procedure.

At step11, when a P-TMSI REALLOCATION COMMAND message is received from SS while waiting for a ROUTING AREA UPDATE ACCEPT message, UE shall:

- ignore the P-TMSI reallocation procedure.
- continue with the routing area updating procedure.

### 12.4.2 Combined routing area updating

The combined routing area updating procedure is a GMM procedure used by PS UEs of UE operation mode A that are IMSI attached for PS and non-PS services. In order to use the combined routing area updating procedure, the network must operate in network operation mode I.

#### 12.4.2.1 Combined routing area updating / combined RA/LA accepted

##### 12.4.2.1.1 Definition

##### 12.4.2.1.2 Conformance requirement

- 1) If the network accepts the combined routing area updating procedure and reallocates a P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.
- 2) If the network accepts the combined routing area updating procedure from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.

#### Reference

3GPP TS 24.008 clause 4.7.5.2.

##### 12.4.2.1.3 Test purpose

To test the behaviour of the UE if the network accepts the combined routing area updating procedure.

The following cases are identified:

- 1) P-TMSI / P-TMSI signature is reallocated.
- 2) Old P-TMSI / P-TMSI signature is not changed.
- 3) Mobile terminating CS call is allowed with IMSI.
- 4) Mobile terminating CS call is allowed with TMSI.

##### 12.4.2.1.4 Method of test

#### Initial condition

#### System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).  
Both cells operating in network operation mode I.

#### User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No  
 UE operation mode A Yes/No  
 Switch off on button Yes/No  
 Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

- 1) A combined PS attach procedure is performed. The UE sends a ROUTING AREA UPDATE REQUEST message. The SS reallocates the P-TMSI, unassigns the TMSI and returns ROUTING AREA UPDATE ACCEPT message with a new P-TMSI and IMSI. The UE acknowledge the new P-TMSI by sending ROUTING AREA UPDATE COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. For CS calls, the IMSI is used
- 2) The UE is CS paged in order to verify that the IMSI is used for CS calls.
- 3) A combined PS attach procedure is performed. The UE sends an ROUTING AREA UPDATE REQUEST message. The SS accepts the P-TMSI signature and returns ROUTING AREA UPDATE ACCEPT message without any P-TMSI and with a new TMSI. The UE acknowledge the new TMSI by sending ROUTING AREA UPDATE COMPLETE message. Further communication UE-SS is performed by the old P-TMSI. For CS calls, the new TMSI is used.
- 4) The UE is CS paged in order to verify that the TMSI is used for CS calls.

#### Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
1a	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
5		->	ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
6a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".



Step	Direction		Message	Comments
	UE	SS		
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
7a		SS		The SS starts integrity protection.
8	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-4 Paging cause = "Terminating interactive call".
9	->		ROUTING AREA UPDATE COMPLETE	
9a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating interactive call".
10a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
10b			Void	
10c			Void	
11	->		SERVICE REQUEST	service type = "paging response"
11aa		SS		The SS starts integrity protection.
11a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
11b			Void	
12	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services. Paging cause = "Terminating conversational call"
13		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
14			Void	
15			Void	
16	->		PAGING RESPONSE	Mobile identity = IMSI
17		SS		The SS releases the RRC connection.
18			Void	
19		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
19a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-1 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available
20a		SS		The SS starts integrity protection.
21	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' No P-TMSI P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
22	->		ROUTING AREA UPDATE COMPLETE	
23	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating interactive call".

Step	Direction		Message	Comments
	UE	SS		
23a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
23b			Void	
23c			Void	
24		->	SERVICE REQUEST	service type = "paging response"
24aa		SS		The SS starts integrity protection.
24a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
24b			Void	
25		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
26		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
27			Void	
28			Void	
29		->	PAGING RESPONSE	Mobile identity = TMSI-1
30		SS		The SS releases the RRC connection.
31			Void	
32		UE		The UE is switched off or power is removed (see ICS).
32a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
33		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
34		SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.4.2.1.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step9, UE shall:

- acknowledge the new P-TMSI by sending the ROUTING AREA UPDATE COMPLETE message.

At step11, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step16, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step20, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step22, UE shall:

- acknowledge the new TMSI by sending the ROUTING AREA UPDATE COMPLETE message.

At step24, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step29, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

## 12.4.2.2 Combined routing area updating / UE in CS operation at change of RA

### 12.4.2.2.1 Definition

### 12.4.2.2.2 Conformance requirement

PS UE in UE operation mode A that is in an ongoing CS transaction at change of routing area shall initiate the normal routing area updating procedure.

### Reference

3GPP TS 24.008 clause 4.7.5.2.

### 12.4.2.2.3 Test purpose

To test the behaviour of the UE if the routing area is changed during an ongoing circuit switched transmission.

### 12.4.2.2.4 Method of test

#### Initial condition

System Simulator:

One cell, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) is operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

#### Test procedure

A combined PS attach procedure is performed. The UE in UE operation mode A initiates a CS call. The routing area change. The UE will perform the normal routing area updating procedure during the ongoing circuit-switched transaction.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1				Set the cell type of cell A to the "Serving cell". (see note)
1a	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	UE			A CS call is initiated.
7			Void	
8			Void	
8a	<-		UTRAN MOBILITY INFORMATION	The SS conveys updated CN system information for the PS domain to the UE in connected mode, including a new routing area code.
8b	->		UTRAN MOBILITY INFORMATION CONFIRM	
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
9a	SS			The SS starts integrity protection.
10	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
11	->		ROUTING AREA UPDATE COMPLETE	
11a	SS			The SS releases the PS signalling connection, but keeps the RRC connection.
12	<-		PAGING TYPE2	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	->		SERVICE REQUEST	service type = "paging response"
13a	SS			The SS starts integrity protection.
13b	SS			The SS releases the CS call.
14	SS			The SS initiates the RRC connection release.
14a	->		ROUTING AREA UPDATE REQUEST	Update type = "combined RA/LA updating", P-TMSI-1 signature, Routing area identity = RAI-4, TMSI status = no valid TMSI available
14b	SS			The SS starts integrity protection.
14c	<-		ROUTING AREA UPDATE ACCEPT	Update result = "combined RA/LA updated", No P-TMSI, P-TMSI-3 signature, Routing area identity = RAI-4
15	UE			The UE is switched off or power is removed (see ICS).

15a	SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
16	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
17	SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

#### UTRAN MOBILITY INFORMATION (step 8a)

The contents of the UTRAN MOBILITY INFORMATION message in this test case is identical to the default message in TS 34.108, with the following exceptions.

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode	Not Present
CN information info	
- PLMN identity	Not Present
- CN common GSM-MAP NAS system information	Not Present
- CN domain related information	
- CN domain identity	CS domain
- CN domain specific GSM-MAP NAS system info	
- T3212	30
- ATT	1
- CN domain specific DRX cycle length coefficient	7
- CN domain related information	
- CN domain identity	PS domain
- CN domain specific GSM-MAP NAS system info	
- RAC	RAC-2
- NMO	0 (Network Mode of Operation I)
- CN domain specific DRX cycle length coefficient	7

#### 12.4.2.2.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the UE has received the new RAI from the SS in the UTRAN MOBILITY INFORMATION message, the UE shall:

- initiate the normal routing area updating procedure.

#### 12.4.2.3 Combined routing area updating / RA only accepted

##### 12.4.2.3.1 Definition

##### 12.4.2.3.2 Conformance requirement

- 1) If the network accepts the combined PS attach procedure, but GMM cause code 'IMSI unknown in HLR' is sent to the UE the User Equipment shall delete the stored TMSI, LAI and CKSN. The User Equipment shall consider USIM invalid for non-PS services until power is switched off or USIM is removed.

- 2) If the network accepts the combined PS attach procedure, but GMM cause code 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is sent to the UE, an UE operation mode A UE may perform an MM IMSI attach procedure.

#### Reference

3GPP TS 24.008 clause 4.7.5.2.

#### 12.4.2.3.3 Test purpose

##### Test purpose1

To test the behaviour of the UE if the network accepts the routing area updating procedure with indication RA only, GMM cause 'IMSI unknown in HLR'.

##### Test purpose2

To test the behaviour of the UE if the network accepts the routing area updating procedure with indication RA only, GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion'.

#### 12.4.2.3.4 Method of test

##### Test Procedure1

##### Initial condition

##### System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).  
Both cells operating in network operation mode I.

##### User Equipment:

The UE has a valid IMSI.

##### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

##### Test procedure

After attach, the UE sends an ROUTING AREA UPDATE REQUEST message. The SS allocates a P-TMSI and returns ROUTING AREA UPDATE ACCEPT message with a P-TMSI. GMM cause 'IMSI unknown in HLR' is indicated from SS. Further communication UE - SS is performed by the P-TMSI. CS services are not possible.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
1a	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
8	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'IMSI unknown in HLR'
9	->		ROUTING AREA UPDATE COMPLETE	
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10a	->		RRC CONNECTION REQUEST	
10b	<-		RRC CONNECTION SETUP	
10c	->		RRC CONNECTION SETUP COMPLETE	
11	->		SERVICE REQUEST	service type = "paging response"
11a	<-		RRC CONNECTION RELEASE	
11b	->		RRC CONNECTION RELEASE COMPLETE	
12	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
13	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
16		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

## Test Procedure2

### Initial condition

#### System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).

Both cells operating in network operation mode I. T3212 is set to 6 minutes.

#### User Equipment:

The UE has a valid IMSI.

### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Automatic MM IMSI attach procedure for UE operation mode A UE Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

### Test procedure

After attach, the UE sends an ROUTING AREA UPDATE REQUEST message . The SS allocates a new P-TMSI signature and returns ROUTING AREA UPDATE ACCEPT message. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. This procedure is repeated until the routing area updating attempt counter is equal to five. An UE operation mode A UE may perform an MM IMSI attach procedure (according to the ICS statement). Further communication UE - SS is performed by the P-TMSI. The existence of a signalling channel is verified by a request for mobile identity. It is further verified that the UE after a successful IMSI attach procedure can perform CS services.

### Expected Sequence

Dependent whether the option 'Automatic MM IMSI attach procedure for UE operation mode A UE' is not supported or not, the steps 1-13 or 14-35 apply depending on manufacturer (see ICS).

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
1a	UE			The UE is set in UE operation mode A and no automatic MM IMSI attach procedure is indicated (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity =IMSI TMSI status = no valid TMSI available
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.



Step	Direction		Message	Comments
	UE	SS		
4		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
5		->	ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
8		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
9		->	ROUTING AREA UPDATE COMPLETE	
10				The routing area updating attempt counter =1. The combined routing area updating procedure is reinitialised at the expiry of T3311
11		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available
12		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
13		->	ROUTING AREA UPDATE COMPLETE	
14				The routing area updating attempt counter =2. The combined routing area updating procedure is reinitialised at the expiry of T3311
15		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available
16		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
17		->	ROUTING AREA UPDATE COMPLETE	
18				The routing area updating attempt counter =3. The combined routing area updating procedure is reinitialised at the expiry of T3311
19		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available

Step	Direction		Message	Comments
	UE	SS		
20	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
21	->		ROUTING AREA UPDATE COMPLETE	
22				The routing area updating attempt counter =4. The combined routing area updating procedure is reinitialised at the expiry of T3311
23	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available
24	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
25	->		ROUTING AREA UPDATE COMPLETE	
26				The routing area updating attempt counter =5. The combined routing area updating procedure is reinitialised at the expiry of T3311
27	UE			The UE is switched off or power is removed (see ICS).
28	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach' Stop the sequence.
28a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
				The following messages are sent and shall be received on cell B
29	UE			The UE is set in UE operation mode A and automatic MM IMSI attach procedure is indicated (see ICS).
30	UE			The UE is powered up or switched on and initiates an attach (see ICS).
31	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
31a	<-		AUTHENTICATION AND CIPHERING REQUEST	
31b	->		AUTHENTICATION AND CIPHERING RESPONSE	
31c	SS			The SS starts integrity protection.
32	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-4
33	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell A.

Step	Direction		Message	Comments
	UE	SS		
34		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
35	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available
36	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
37	->		ROUTING AREA UPDATE COMPLETE	
38				The routing area updating attempt counter =1. The combined routing area updating procedure is reinitialised at the expiry of T3311
39	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
40	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
41	->		ROUTING AREA UPDATE COMPLETE	
42				The routing area updating attempt counter =2. The combined routing area updating procedure is reinitialised at the expiry of T3311
43	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
44	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
45	->		ROUTING AREA UPDATE COMPLETE	
46				The routing area updating attempt counter =3. The combined routing area updating procedure is reinitialised at the expiry of T3311
47	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
48	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)

Step	Direction		Message	Comments
	UE	SS		
49	->		ROUTING AREA UPDATE COMPLETE	
50				The routing area updating attempt counter =4. The combined routing area updating procedure is reinitialised at the expiry of T3311
51	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
52	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
53	->		ROUTING AREA UPDATE COMPLETE	
54				The routing area updating attempt counter =5. Optional step. See TS 34.108
55	UE		Registration on CS	This is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI-1. Steps 56 - 62 are only performed if the UE has performed the Registration Procedure in step 55.
56	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
57	->		RRC CONNECTION REQUEST	
58	<-		RRC CONNECTION SETUP	
59	->		RRC CONNECTION SETUP COMPLETE	
60	->		PAGING RESPONSE	Mobile identity = TMSI-1
61	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
62	->		RRC CONNECTION RELEASE COMPLETE	
63	UE			The UE is switched off or power is removed (see ICS).
64	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
65		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

#### 12.4.2.3.5 Test requirements

Test requirements for Test Procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area updating procedure.

At step9, UE shall:

- acknowledge the new P-TMSI by sending the ROUTING AREA UPDATE COMPLETE message.

At step11, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step13, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

#### Test requirements for Test Procedure2

At step3 and 31, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step6 and 35, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area updating procedure.

At step11, 15, 19 and 23, UE shall:

- re-initiate the combined routing area updating procedure.

At step39, 43, 47 and 51, UE shall:

- re-initiate the combined routing area updating procedure.

At step55, UE shall:

- perform MM location updating procedure.

At step60, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

### 12.4.2.3a Combined routing Area Updating / accepted / change of DRX parameter IE

#### 12.4.2.3a.1 Definition

#### 12.4.2.3a.2 Conformance requirement

The combined routing area updating procedure is initiated only by a GPRS MS operating in MS operation modes A or B, if the UE is in state GMM-REGISTERED and MM-IDLE, if the network operates in network operation mode I and when a GPRS MS needs to update the network with a new DRX parameter IE.

#### Reference:

3GPP TS 24.008 subclause 4.7.5.2

#### 12.4.2.3a.3 Test purpose

To test the behaviour of the UE when the UE enters a cell with a different value of the DRX parameter.

## 12.4.2.3a.4 Method of test

## Initial conditions

## System Simulator:

Two cells are set to the same RAI (RAI-1).

Cell A: the value of the DRX parameter "CN domain specific DRX cycle length coefficient" is set to 8.

Cell B: the value of the DRX parameter "CN domain specific DRX cycle length coefficient" is set to 7.

Both two cells are operating in network operation mode I.

## User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

## Related ICS/IXIT statement(s)

- Support of PS service Yes/No.
- UE operation mode A Yes/No
- Switch off on button Yes/No.
- Automatic PS attach procedure at switch on or power on Yes/No.

## Test procedure

Two cells are configured.

Cell A is set to the "Serving cell" in order that the UE initiates an attach procedure to cell A.

The SS verifies that the UE performs a combined PS attach procedure.

Cell B is set to the "Serving cell" and cell A is set to the "Suitable neighbour cell".

The SS verifies that the UE performs the combined routing area updating procedure when cell B with the different value of DRX parameter is entered.

The SS verifies that the UE responds to a paging for PS domain.

## Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell "
		SS		
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".

4	->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
5	<-	AUTHENTICATION AND CIPHERING REQUEST	
6	->	AUTHENTICATION AND CIPHERING RESPONSE	
7	SS		The SS starts integrity protection.
8	<-	ATTACH ACCEPT	Attach result = ' Combined PS / IMSI attached' No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1
9	SS		The SS releases the RRC connection The following messages are sent and shall be received on CellB.
10	SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
11	SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
12	->	ROUTING AREA UPDATE REQUEST	Update type = ' Combined RA/LA updating ' P-TMSI-1 signature Routing area identity = RAI-1 CN domain specific DRX cycle length coefficient = 7
13	SS		The SS starts integrity protection.
14	<-	ROUTING AREA UPDATE ACCEPT	Update result = ' Combined RA/LA updated' No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1
15	SS		The SS releases the RRC connection.
16	<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
17	SS		SS verifies that the UE transmits an RRC CONNECTION REQUEST message. SS will reject this request. The IE "Establishment cause" is not checked.
18	UE		The UE is switched off or power is removed (see ICS).
19	SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
20	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
21	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

## Specific message contents

## System Information Block type 1 (cell A)

- CN domain system information - CN domain identity - CHOICE CN Type - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain specific DRX cycle length coefficient	PS GSM-MAP  05 00H 8
---	----------------------------------

## System Information Block type 1 (cell B)

- CN domain system information - CN domain identity - CHOICE CN Type - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain specific DRX cycle length coefficient	PS GSM-MAP  05 00H 7
--	----------------------------------

## 12.4.2.3a.5 Test Requirement

At step4, when the UE is powered up or switched on, the UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step12, the UE shall:

- initiate the combined routing area updating procedure with the new value of DRX parameter.

At step 17, the SS sends the paging message for PS domain, the UE shall

- respond to the paging message for PS domain.

## 12.4.2.4 Combined routing area updating / rejected / PLMN not allowed

## 12.4.2.4.1 Definition

## 12.4.2.4.2 Conformance requirement

- 1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'PLMN not allowed' the User Equipment shall:
  - 1.1 not perform combined GPRA attach when switched on in the same location area or PLMN, except when the PLMN identity is equal to the HPLMN.
  - 1.2 delete the stored RAI, PS-CKSN, P-TMSI, P-TMSI signature, TMSI CKSN and LAI.
  - 1.3 store the PLMN in the 'forbidden PLMN list', except when the PLMN identity is equal to the HPLMN.
- 2) An MS that receives a ROUTING AREA UPDATE REJECT message stops timer T3330, enters state MM IDLE and for all causes except #12, #14 and #15 deletes the list of "equivalent PLMNs".

## Reference

3GPP TS 24.008 clause 4.7.5.2.

3GPP TS 23.122 clause 3.1.

## 12.4.2.4.3 Test purpose

To test the behaviour of the UE if the network rejects the combined routing area updating procedure of the UE with the cause 'PLMN not allowed'.

## 12.4.2.4.4 Method of test

## Initial condition

System Simulator:



Five cells (not simultaneously activated), cell A in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell B in MCC1/MNC2/LAC1/RAC2 (RAI-10), cell C in MCC1/MNC2/LAC2/RAC1 (RAI-9) and cell D in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell E in MCC1/MNC3/LAC1/RAC1 (RAI-11).

The PLMN containing Cell E is equivalent to the PLMN that contains Cell A.  
All five cells are operating in network operation mode I

The HPLMN is different from MCC1/MNC2.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No
PS attach attempted automatically by outstanding request	Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'PLMN not allowed'. The SS checks that the UE does not perform PS attach if activated in the same PLMN. The SS checks that the UE does not perform IMSI attach if activated in the same PLMN.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Non-Suitable cell". Set the cell type of cell E to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-8 Mobile identity = TMSI-1 Equivalent PLMN: MCC = 1, MNC=3
5		->	ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
7		SS		The following messages are sent and shall be received on cell B and cell E. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". Set the cell type of cell E to the "Suitable neighbour cell". (see note)
8	UE			Cell B is preferred by the UE.
8a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
9		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-8 TMSI status = valid TMSI available
10		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'PLMN not allowed'
10a		SS		The SS releases the RRC connection.
11	UE			The UE initiates an attach by MMI or AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
12a		SS		The SS deactivates cell E. Set the cell type of cell E to the "Non-Suitable cell".
13		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.

Step	Direction		Message	Comments
	UE	SS		
15		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
16	UE			Cell C is preferred by the UE.
17	UE			The UE initiates an attach by MMI or by AT command.
18	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
19	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
22	UE			Cell A is preferred by the UE.
23	UE			The UE initiates an attach by MMI or by AT command.
24	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
25	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
26	UE			No response from the UE to the request. This is checked for 10 seconds.
27		SS		The following messages are sent and shall be received on cell D. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
28	UE			Cell D is preferred by the UE. Step 28a and 29 are only performed by an UE which will not initiate a PS attach automatically (see ICS)
28a conditional	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE.
29 conditional	UE			The UE initiates an attach by MMI or by AT command.
29a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
30	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
30a	SS			The SS starts integrity protection.
31	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2 Mobile identity = IMSI
32	->		ATTACH COMPLETE	
33	UE			The UE is switched off or power is removed (see ICS).
34	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Step	Direction		Message	Comments
	UE	SS		
35	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Serving cell" and "Suitable neighbour cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.4.2.4.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- -initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step 10, the UE shall delete the equivalent PLMN list (MCC=1, MNC=3).

At step 12, the UE shall not initiate a PS attach procedure to cell E.

At step 18 and 24, UE shall:

- not initiate a PS attach procedure.

At step14, 20 and 26, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step20, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step30, UE shall:

- perform the PS attach procedure.

#### 12.4.2.5a Combined routing area updating / rejected / roaming not allowed in this location area

##### 12.4.2.5a.1 Definition

##### 12.4.2.5a.2 Conformance requirement

- 1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment:

- 1.1 shall not perform combined PS attach when in the same location area.
- 1.2 shall store the LA in the 'forbidden location areas for roaming'.
- 1.3 shall perform a routing area update when entering in a new location area if the LAI or the PLMN identity is not contained in any of the lists "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" or "forbidden PLMNs" and the current update status is different from "IDLE NO IMSI".

- 2) The User Equipment shall reset the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.

#### Reference

3GPP TS 24.008 clause 4.7.5.2.

3GPP TS 23.122 clause 4.5.2.

#### 12.4.2.5a.3 Test purpose

##### Test purpose1

To test that on receipt of a rejection using the 'Roaming not allowed in this area' cause code, the UE ceases trying a routing area updating procedure on that location area. Successful combined routing area updating procedure is possible in other location areas.

##### Test purpose2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

#### 12.4.2.5a.4 Method of test

##### 12.4.2.5a.4.1 Test procedure1

#### Initial condition

##### System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6). Both cells are operating in network operation mode I.

##### User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

#### Test procedure

The SS rejects a combined routing area updating with the cause value 'Roaming not allowed in this area'. A new attempt for a combined PS attach is not possible. Successful combined routing area updating procedure is performed in another location area. The UE is moved back to the 1<sup>st</sup> location area. A combined routing area updating shall not be performed, as the LA is on the forbidden list.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = TMSI-1
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-2
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this area'
10a		SS		The SS releases the RRC connection.
11			Void	
12			Void	
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
18	UE			Cell A is preferred by the UE.
18a			Void	
19			Void	
19a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".

Step	Direction		Message	Comments
	UE	SS		
20	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-2
20a		SS		The SS starts integrity protection.
21	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2 Mobile identity = TMSI-1
22	->		ROUTING AREA UPDATE COMPLETE	
22a		SS		The SS releases the RRC connection.
23	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
24		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
25			Void	
26			Void	
27	->		PAGING RESPONSE	Mobile identity = TMSI-1
27a		SS		The SS starts integrity protection.
28		SS		The SS releases the RRC connection
29			Void	
30	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating background call"
30a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating background call".
30b			Void	
30c			Void	
31	->		SERVICE REQUEST	service type = "paging response"
31o		SS		The SS starts integrity protection.
31a		SS		The SS releases the RRC connection.
31b			Void	
32		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
33	UE			No ROUTING AREA UPDATE REQUEST sent to SS (SS waits 30 seconds).
34	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
35	UE			No response from the UE to the request. This is checked for 10 seconds.
NOTE:	The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

#### 12.4.2.5a.4.2 Test procedure2

##### Initial condition

##### System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6). Both cells are operating in network operation mode I.

## User Equipment:

The UE has a valid IMSI. UE is Idle Updated on cell A.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The SS rejects a combined routing area updating with the cause value 'Roaming not allowed in this area'. The UE is switched off for 10 seconds and switched on again. The SS checks that a combined PS attach is possible on the cell on which the previous combined routing area updating had been rejected.

If USIM removal is possible without switching off:

The SS rejects a routing area updating with the cause value 'Roaming not allowed in this area'. The USIM is removed and inserted in the UE. The SS checks that a PS attach procedure and routing area updating procedure is possible on the cell on which the routing area updating had previously been rejected.



## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = TMSI-1
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-2
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this area'
10a		SS		The SS releases the RRC connection.
11			Void	
12			Void	
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
18	UE			The UE gets the USIM replaced, is powered up or switched on.
18a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE.

Step	Direction		Message	Comments
	UE	SS		
19	UE			The UE initiates an attach automatically (see ICS) by MMI or AT command.
19a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
20a	<-		AUTHENTICATION AND CIPHERING REQUEST	
20b	->		AUTHENTICATION AND CIPHERING RESPONSE	
20c	SS			The SS starts integrity protection.
21	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6 Mobile identity = TMSI-1
22	->		ATTACH COMPLETE	
22a	SS			The SS releases the RRC connection.
23	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
24	SS		Void	The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
25			Void	
26			Void	
27	->		PAGING RESPONSE	Mobile identity = TMSI-1
27a	SS			The SS starts integrity protection.
28	SS			The SS releases the RRC connection.
29			Void	
30	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging cause = "Terminating background call"
30a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating background call".
30b			Void	
30c			Void	
31	->		SERVICE REQUEST	service type = "paging response"
31o	SS			The SS starts integrity protection.
31a	SS			The SS releases the RRC connection.
31b			Void	
32	UE			The UE is switched off or power is removed (see ICS).
33	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
34	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Specific message contents

None.

## 12.4.2.5a.5 Test requirements

## Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence

At step12, when the SS rejects the combined routing area update procedure with GMM cause = 'Roaming not allowed in this area', UE shall:

- not initiate a PS attach procedure.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step20, UE shall:

- initiate the combined RA/LA updating procedure.

At step27, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step31, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step35, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

## Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step20, UE shall:

- initiate the combined PS attach procedure.

At step27, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step31, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

#### 12.4.2.5b Combined routing area updating / rejected / No Suitable Cells In Location Area.

##### 12.4.2.5b.1 Definition

##### 12.4.2.5b.2 Conformance requirement

- 1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:
  - 1.1 store the LA or the PLMN identity in the 'forbidden location areas for roaming'.
  - 1.2 search for a suitable cell in a different location area on the same PLMN.
- 2) An MS that receives a ROUTING AREA UPDATE REJECT message stops timer T3330, enters state MM IDLE and for all causes except #12, #14 and #15 deletes the list of "equivalent PLMNs".

#### Reference

3GPP TS 24.008 clauses 4.7.5.2.4

##### 12.4.2.5b.3 Test purpose

To test the behaviour of the UE if the network rejects a combined routing area updating procedure of the UE with the cause 'No Suitable Cells In Location Area'.

To test that the UE deletes the list of forbidden LAs when power is switched off.

##### 12.4.2.5b.4 Method of test

#### Initial condition

#### System Simulator:

Five cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell D in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell E in MCC1/MNC2/LAC1/RAC1 (RAI-5).

All five cells are operating in network operation mode I.

The PLMN contains Cell A, B and D is equivalent to the PLMN that contains Cell E.

#### User Equipment:

The UE has valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No  
 UE operation mode A Yes/No  
 USIM removal possible without powering down Yes/No  
 Switch off on button Yes/No  
 Automatic PS attach procedure at switch on or power on Yes/No

### Test procedure

The SS rejects a combined routing area updating with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall perform a combined routing area update procedure when the UE enters a suitable cell in a different location area on the same PLMN.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following message are sent and shall be received on cell D. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Serving cell". Set the cell type of cell E to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell D is preferred by the UE.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 Mobile identity = IMSI Equivalent PLMN: MCC = 1, MNC=2
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Non-Suitable cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C Cell A is preferred by the UE.
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-1 signature Routing area identity = RAI-4
8	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'No Suitable Cells In Location Area'
8a	SS			The SS releases the RRC connection. The following message are sent and shall be received on cell B.
9	->		ROUTING AREA UPDATE REQUEST	Attach type = 'Combined RA/LA updating with IMSI attach' Mobile identity = P-TMSI-1
10	<-		ROUTING AREA UPDATE ACCEPT	Attach result = 'Combined RA/LA updating with IMSI attach' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-3 Equivalent PLMN: MCC = 1, MNC=2
11	->		ROUTING AREA UPDATE COMPLETE	
11a	SS			The SS releases the RRC connection.

12	SS		Set the cell type of cell D to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell E to the "Suitable neighbour cell". (note) The SS deactivates Cell B and activates Cell D and Cell E The SS configures power level of each Cell as follows. Cell D > Cell E Cell D is preferred by the UE.
13			Cell D is preferred by the UE.
14	->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-1 signature Routing area identity = RAI-4
15	<-	ROUTING AREA UPDATE REJECT	GMM cause = 'No Suitable Cells In Location Area'
15a	SS		The SS releases the RRC connection.
16			The following message are sent and shall be received on cell E.
17	->	ROUTING AREA UPDATE REQUEST	Attach type = 'Combined RA/LA updating with IMSI attach' Mobile identity = IMSI
18	<-	ROUTING AREA UPDATE ACCEPT	Attach result = 'Combined RA/LA updated' Mobile identity = P-TMSI-3 P-TMSI-3 signature Routing area identity = RAI-5 Equivalent PLMN: MCC=1. MNC=2
19	->	ROUTING AREA UPDATE COMPLETE	
20	SS		The SS releases the RRC connection.
21	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
22	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell", "Serving cell" and "Non-Suitable cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.4.2.5b.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure.

At step 8, the UE shall maintain the equivalent PLMN list (MCC=1, MNC=2).

At step9, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the combined routing area update procedure.

At step 15, the UE shall maintain the equivalent PLMN list (MCC=1, MNC=2).

At step 17, when the UE enters a suitable cell in a different but equivalent PLMN (MCC=1, MNC=2), UE shall:

- perform the combined routing area update procedure.

### 12.4.2.5c Combined routing area updating / rejected / Location area not allowed

#### 12.4.2.5c.1 Definition

#### 12.4.2.5c.2 Conformance requirement

If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'Location area not allowed', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.
- set the PS update status to GU3 ROAMING NOT ALLOWED.
- delete any TMSI, LAI and ciphering key sequence number.
- store the LAI in the list of "forbidden location areas for regional provision of service"
- not delete the list of "equivalent PLMNs".
- perform a cell selection.

#### Reference

3GPP TS 24.008 clauses 4.7.5.2.4

#### 12.4.2.5c.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'PS services not allowed in this PLMN'.

#### 12.4.2.5c.4 Method of test

#### Initial condition

##### System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).

All three cells are operating in network operation mode I (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

##### User Equipment:

The UE has a valid IMSI.

The UE is in UE operation mode A.

#### Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

#### Test procedure

The SS rejects a combined routing area updating with the cause value 'Location area not allowed'. The SS checks that the UE performs combined PS attach when the UE enters a equivalent PLMN.



## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following messages are sent and shall be received on cell A. The UE is set in UE operation mode A (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = TMSI-1 Equivalent PLMNs = MCC2,MNC1
5	->		ATTACH COMPLETE	
6	SS			The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-2
9	<-		ROUTING AREA UPDATE REJECT	GMM cause = Location area not allowed '
10	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the " Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
14	UE			The UE performs cell selection. The following messages are sent and shall be received on cell C.
15	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
16	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-2 signature Routing area identity = RAI-6 Mobile identity = TMSI-2
17	->		ATTACH COMPLETE	

18	UE		The UE is switched off or power is removed (see ICS).
19	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
20	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.4.2.5c.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

- initiate the combined routing area update procedure.

At step 12, the UE shall:

- not initiate combined PS attach procure.

At step 14, the UE shall:

- perform combined PS attach procedure with Mobile identity = IMSI and Attach result = 'Combined PS / IMSI attached' to the equivalent cell.

#### 12.4.2.5d Combined routing area updating / rejected / PS services not allowed in this PLMN

##### 12.4.2.5d.1 Definition

##### 12.4.2.5d.2 Conformance requirement

If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'PS Services not allowed in this PLMN', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.
- set the PS update status to GU3 ROAMING NOT ALLOWED.
- store the PLMN identity in the "forbidden PLMNs for GPRS service" list.
- not delete the list of "equivalent PLMNs".

### Reference

3GPP TS 24.008 clauses 4.7.5.2.4

##### 12.4.2.5d.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'PS services not allowed in this PLMN'.

## 12.4.2.5d.4 Method of test

## Initial condition

## System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).

All three cells are operating in network operation mode I (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

## User Equipment:

The UE has a valid IMSI.

The UE is in UE operation mode A.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The SS rejects a combined routing area updating with the cause value 'PS service not allowed in this PLMN'. The SS checks that the UE performs combined PS attach when the UE enters a equivalent PLMN.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following messages are sent and shall be received on cell A. The UE is set in UE operation mode A (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = TMSI-1 Equivalent PLMNs = MCC2,MNC1
5	->		ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-8
9	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'PS service not allowed in this PLMN'
10	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the " Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
14	->		ATTACH REQUEST	The following messages are sent and shall be received on cell C. Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
15	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-2 signature Routing area identity = RAI-6 Mobile identity = TMSI-2
16	->		ATTACH COMPLETE	
17	UE			The UE is switched off or power is removed (see ICS).

18	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
19	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.4.2.5d.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

- initiate the combined routing area update procedure.

At step 12, the UE shall:

- not initiate combined PS attach procure.

At step 14, the UE shall:

- perform combined PS attach procedure with Mobile identity = IMSI and Attach result = 'Combined PS / IMSI attached' to the equivalent cell.

#### 12.4.2.6 Combined routing area updating / abnormal cases / access barred due to access class control

##### 12.4.2.6.1 Definition

##### 12.4.2.6.2 Conformance requirement

- 1) The UE shall not perform combined routing area updating procedure, but stays in the current serving cell and applies normal cell reselection process.
- 2) The User Equipment shall perform the combined routing area updating procedure when:
  - 2.1 Access is granted.
  - 2.2 Cell is changed.

### Reference

3GPP TS 24.008 clause 4.7.5.2.

##### 12.4.2.6.3 Test purpose

#### Test purpose1

To test the behaviour of the UE in case of access class control (access is granted).

## Test purpose2

To test the behaviour of the UE in case of access class control (cell is changed).

### 12.4.2.6.4 Method of test

#### 12.4.2.6.4.1 Test procedure1

### Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is initially indicated to be barred on Cell B.

### System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has Access Class x not barred, cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) has Access Class x barred.  
Both cells are operating in network operation mode I.

### User Equipment:

The UE has valid IMSI. UE is Idle Updated on cell A.

### Related ICS/IXIT statements

Support of PS service    Yes/No  
UE operation mode A    Yes/No  
Switch off on button    Yes/No  
Automatic PS attach procedure at switch on or power on    Yes/No

### Test procedure

A PS attach procedure is performed. The routing area is changed. The SS indicates access class x barred. A routing area updating procedure is not performed.

The SS indicates that access class x is not barred. A routing area updating procedure is performed.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
		SS		
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = IMSI
5	->		ATTACH COMPLETE	
6	SS			The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ROUTING AREA UPDATE REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
9	SS			The access class x is not barred anymore.
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
11	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-4
12	->		ROUTING AREA UPDATE COMPLETE	
13	UE			The UE is switched off or power is removed (see ICS).
14	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
15	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

## Specific message contents

None.

## 12.4.2.6.4.2 Test procedure2

## Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is indicated to be barred on cell B.

## System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x not barred, cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) has access class x barred, cell C in MCC1/MNC1/LAC1/RAC2 (RAI-4) has access class x not barred.  
All three cells are operating in network operation mode I.

## User Equipment:

The UE has a valid IMSI.

## Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

## Test procedure

A PS attach procedure is performed. The routing area is changed. The SS indicates access class x barred. A routing area updating procedure is not performed.

A cell change is performed into a cell where access class x is not barred. A routing area updating procedure is performed.



## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = IMSI
5	->		ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ROUTING AREA UPDATE REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
9		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Suitable neighbour cell ". Set the cell type of cell C to the "Serving cell". (see note)
10	UE			Cell C is preferred by the UE.
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
12	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-4
13	->		ROUTING AREA UPDATE COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
16		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

#### 12.4.2.6.5 Test requirements

Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the access class x is barred , UE shall:

- not perform the combined routing area updating procedure.

At step10, when the access class x is not barred, UE shall:

- perform the combined routing area updating procedure.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the access class x is barred UE shall:

- not perform the combined routing area updating procedure.

At step11, when the serving cell is changed, UE shall:

- perform the combined routing area updating procedure.

#### 12.4.2.7 Combined routing area updating / abnormal cases / attempt counter check / procedure timeout

##### 12.4.2.7.1 Definition

##### 12.4.2.7.2 Conformance requirement

- 1) When a T3330 timeout has occurred during a routing area updating procedure, the UE shall repeat the routing area updating procedure after T3330 timeout until the procedure is repeated five times.
- 2) When a routing area updating procedure is repeated five times, the routing area updating attempt counter is incremented and five more routing area updating procedures are performed. This procedure is repeated until the routing area updating attempt counter is five, the UE shall then start timer T3302.
- 3) When the T3302 expire, a new routing area updating procedure shall be initiated.

Reference

3GPP TS 24.008 clause 4.7.5.2.

##### 12.4.2.7.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

## 12.4.2.7.4 Method of test

## Initial condition

## System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).  
Both cells are operating in network operation mode I.

## User Equipment:

The UE has a valid IMSI. UE is Idle Updated on cell A.

## Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

## Test procedure

The UE initiates a routing area updating procedure (routing area updating attempt counter zero). The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter one) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter two) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter three) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter four) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and as the routing area updating attempt counter is five. T3302 is started.

The UE may perform a Location Update procedure.

The UE initiates a routing area updating procedure with routing area updating attempt counter zero after T3302 expires with the stored P-TMSI, P-TMSI signature, PS CKSN and RAI.

T3302; set to 12 minutes.

T3311; 15 seconds.

T3330; 15 seconds.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
		SS		
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = IMSI
5	->		ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
		SS		
7	UE			Cell B is preferred by the UE. K = 1.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k (k is not visible. It is only used for clarifying the sequence.) Retransmission counter = 0
9	SS			No response is given from the SS.
10	SS			The SS verifies that the time between the RA update requests is T3330seconds
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 1
12	SS			No response is given from the SS.
13	SS			The SS verifies that the time between the RA update requests is T3330seconds
14	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 2
15	SS			No response is given from the SS.
16	SS			The SS verifies that the time between the RA update requests is T3330seconds

Step	Direction		Message	Comments
	UE	SS		
17		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 3
18		SS		No response is given from the SS.
19		SS		The SS verifies that the time between the RA update requests is T3330seconds
20		->	ROUTING AREA UPDATING REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 4
21		SS		No response is given from the SS.
22		SS		The SS verifies that the time between the RA update requests is T3311 + T3330 seconds.
23		SS		Step 8 – 22 is repeated four times with k = 2, k = 3, k = 4 and k = 5
23a optional		UE	Registration on CS	The UE may perform a normal location updating procedure. See TS 34.108
24		SS		The SS verifies that the time between the RA update requests is T3302 + T3330 seconds
25		->	ROUTING AREA UPDATE REQUEST	Update type = - 'combined RA/LA updating with IMSI attach' (If Step23a is performed) - 'combined RA/LA updating' (If Step23a is not performed) P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
26		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-4
27		->	ROUTING AREA UPDATE COMPLETE	
28		UE		The UE is switched off or power is removed (see ICS).
29		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
30		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

### Specific message contents

None.

#### 12.4.2.7.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area updating procedure with information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the conditions described below.

Case 1) A timer T3330 timeout has occurred during a combined routing area updating procedure with the Routing area attempt counter less than five and the Retransmission counter less than five

At step11, 14, 17 and 20, UE shall:

- repeat the combined routing area updating procedure after the timer T3330 timeout

Case2) A timer T3330 timeout has occurred during a combined routing area updating procedure with the Routing area attempt counter less than five and the Retransmission counter five

At step 22, UE shall:

- not repeat the combined routing area updating procedure.

Case 3) A timer T3311 timeout has occurred and the Routing area attempt counter is less than five,

At step23, UE shall:

- repeat the combined routing area updating procedure

Case 4) A timer T3330 timeout has occurred during a combined routing area updating procedure with the Routing area attempt counter five and the Retransmission counter five.

At step24, UE shall:

- not initiate a routing area updating procedure.

Case5) The timer T3302 expires

At step25, UE shall:

- initiate the new routing area updating procedure

#### 12.4.2.8 Combined routing area updating / abnormal cases / change of cell into new routing area

##### 12.4.2.8.1 Definition

##### 12.4.2.8.2 Conformance requirement

When a change of cell into a new routing area is performed before the routing area updating procedure is finished, the UE shall abort the routing area updating procedure and re-initiate it in the new routing area.

##### Reference

3GPP TS 24.008 clause 4.7.5.2.

##### 12.4.2.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

##### 12.4.2.8.4 Method of test

##### Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC1/MNC1/LAC1/RAC3 (RAI-5).

All three cells are operating in network operation mode I.

#### User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The UE initiates a routing area updating procedure. The ROUTING AREA UPDATE ACCEPT message is delayed from the SS. The UE performs a cell update into a new routing area. The UE shall re-initiate a routing area updating procedure in the new routing area. The UE shall not increment the attempt counter.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = IMSI
5	->		ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
9	SS			No response id given from the SS.
10		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Serving cell". (see note)
11	UE			The RF level of cell B is lowered, and the RF level of cell C is increased, until cell C is preferred by the UE.
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-5
14	->		ROUTING AREA UPDATE COMPLETE	
15	UE			The UE is switched off or power is removed (see ICS).
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'



17	SS	The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

### Specific message contents

None.

#### 12.4.2.8.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the routing area update procedure.

At step12, when change of cell into new routing area is performed before the routing area updating procedure is finished, UE shall:

- abort the routing area updating procedure.
- re-initiate new routing area updating procedure in the new routing area.

#### 12.4.2.9 Combined routing area updating / abnormal cases / change of cell during routing area updating procedure

##### 12.4.2.9.1 Definition

##### 12.4.2.9.2 Conformance requirement

When a change of cell within new routing area is performed before the routing area updating procedure is finished, the UE shall perform the cell update before the routing area updating procedure is finished.

##### Reference

3GPP TS 24.008 clause 4.7.5.2.

##### 12.4.2.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

##### 12.4.2.9.4 Method of test

##### Initial condition

##### System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC1/MNC1/LAC1/RAC2 (RAI-4).

All three cells are operating in network operation mode I.

##### User Equipment:

The UE has a valid IMSI. UE is Idle Updated on cell A.

## Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

## Test procedure

The UE initiates a routing area updating procedure. The ROUTING AREA UPDATE ACCEPT message is delayed from the SS. The UE performs a cell update within the routing area. The UE then waits for the ROUTING AREA UPDATE ACCEPT message.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note)
2		UE		The UE is powered up or switched on and initiates an attach (see ICS).
3		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = IMSI
5		->	ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7		UE		Cell B is preferred by the UE.
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
9		SS		No response id given from the SS.
10		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Serving cell". (see note)
11		UE		The RF level of cell B is lowered until cell C is preferred by the UE.
12a		->	CELL UPDATE	Cell update cause = 'cell reselection'
12b		<-	CELL UPDATE CONFIRM	
13		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-4
14		->	ROUTING AREA UPDATE COMPLETE	
15		UE		The UE is switched off or power is removed (see ICS).
16		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
17		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

### Specific message contents

None.

#### 12.4.2.9.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate routing area update procedure.

At step12a, when a change of cell within a new routing area is performed before the routing area updating procedure is finished, UE shall:

- perform the cell update.

#### 12.4.2.10 Combined routing area updating / abnormal cases / PS detach procedure collision

##### 12.4.2.10.1 Definition

##### 12.4.2.10.2 Conformance requirement

- 1) When a detach request is received with cause 'PS detach' or 'combined PS/IMSI detach' by the UE while waiting for a ROUTING AREA UPDATE ACCEPT message, the UE shall terminate the routing area updating procedure and continue with the PS detach procedure.
- 2) When a detach request is received with cause 'IMSI detach' by the UE while waiting for a ROUTING AREA UPDATE ACCEPT message, the UE shall ignore the detach request and continue with the routing area updating procedure.

### Reference

3GPP TS 24.008 clause 4.7.5.2.

##### 12.4.2.10.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

##### 12.4.2.10.4 Method of test

##### 12.4.2.10.4.1 Test procedure1

### Initial condition

#### System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Both cells are operating in network operation mode I.

#### User Equipment:

The UE has a valid IMSI.

## Related ICS/IXIT statements

Support of PS service Yes/No  
 UE operation mode A Yes/No  
 Switch off on button Yes/No  
 Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The UE initiates a routing area updating procedure. The SS does not answer the routing area updating procedure, but initiates a PS detach procedure with cause 'PS detach' or 'combined PS/IMSI detach'. The UE shall terminate the routing area updating procedure and continue with the PS detach procedure.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
		SS		
2	UE	ATTACH REQUEST		The UE is powered up or switched on and initiates an attach (see ICS). Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3	->			
3a	<-	AUTHENTICATION AND CIPHERING REQUEST AUTHENTICATION AND CIPHERING RESPONSE		The SS starts integrity protection. Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = IMSI
3b	->			
3c	SS			
4	<-	ATTACH ACCEPT		
5	->	ATTACH COMPLETE		
6	SS	ROUTING AREA UPDATE REQUEST		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			
8	->		Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available	
9	SS			The SS ignores the ROUTING AREA UPDATE REQUEST message and initiates a detach procedure.
10	<-		DETACH REQUEST	Detach type = 're-attach not required'
11	->		DETACH ACCEPT	
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

## Specific message contents

None.

## 12.4.2.10.4.2 Test procedure2

## Initial condition

## System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).  
Both cells are operating in network operation mode I.

## User Equipment:

The UE has a valid P-TMSI and RAI.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The UE initiates a routing area updating procedure. The SS does not answer the routing area updating procedure, but initiates a PS detach procedure with cause 'TMSI detach'. The UE shall ignore the detach procedure and continue with the routing area updating procedure.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	SS			The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
	SS			
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = IMSI
5	->		ATTACH COMPLETE	
6	SS			The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
	SS			
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
9	SS			The SS ignores the ROUTING AREA UPDATE REQUEST message and initiates a detach procedure.
10	<-		DETACH REQUEST	Detach type = 'IMSI detach'
11	UE			The UE ignores the DETACH REQUEST message and continue the routing area updating procedure.
12	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-4
13	->		ROUTING AREA UPDATE COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
16	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

#### 12.4.2.10.5 Test requirements

##### Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate routing area update procedure.

At step11, when the UE receives a DETACH REQUEST message with cause 'PS detach' or 'combined PS/IMSI detach' from SS while waiting for a ROUTING AREA UPDATE ACCEPT message, UE shall:

- terminate the routing area updating procedure
- continue with the PS detach procedure.

##### Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate routing area update procedure.

At step11, the UE receives a DETACH REQUEST message with cause 'IMSI detach' from SS while waiting for a ROUTING AREA UPDATE ACCEPT message, UE shall:

- ignore the detach request procedure.
- continue with the routing area updating procedure.

### 12.4.3 Periodic routing area updating

#### 12.4.3.1 Periodic routing area updating / accepted

##### 12.4.3.1.1 Definition

##### 12.4.3.1.2 Conformance requirement

The User Equipment shall perform a periodic routing area update procedure after a T3312 timeout.

##### Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.1.

##### 12.4.3.1.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.



## 12.4.3.1.4 Method of test

## Initial condition

## System Simulator:

One cell operating in network operation mode II (in case of UE operation mode A).

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

## User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The UE initiates a PS attach procedure with identity P-TMSI. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. A routing area updating procedure is performed at T3312 timeout.

T3312; set to 6 minutes.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 11.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
5b		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
6	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1
7		SS		The SS verifies that the time between the attach and the periodic RA updating is T3312
7a		SS		The SS starts integrity protection.
8	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1
8a		SS		The SS releases the RRC connection.
9	UE			The UE is switched off or power is removed (see ICS).
9a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
10	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
10a		SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
11				The SS is set in network operation mode II.
12	UE			The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 10.

## Specific message contents

None.

## 12.4.3.1.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step6, when the timer T3312 is expired, UE shall:

- initiate the routing area updating procedure with Update type = 'Periodic updating'.

### 12.4.3.2 Periodic routing area updating / accepted / T3312 default value

12.4.3.2.1 Definition

12.4.3.2.2 Conformance requirement

The User Equipment shall perform a periodic routing area update procedure after a T3312 timeout.

#### Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.2.

12.4.3.2.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.2.4 Method of test

#### Initial condition

#### System Simulator:

One cell operating in network operation mode I.

#### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The UE initiates a combined PS attach procedure. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. After 54 minutes, a periodic routing area updating procedure is initiated by the UE.

T3312; default value 54 minutes.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
2a	<-		AUTHENTICATION AND CIPHERING REQUEST	
2b	->		AUTHENTICATION AND CIPHERING RESPONSE	
2c	SS			The SS starts integrity protection.
3	<-		ATTACH ACCEPT	Attach result = 'Combined PS /IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1 T3312 = 54 min
4	->		ATTACH COMPLETE	
5	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = valid TMSI available or IE not present.
6	SS			The SS verifies that the time between the attach request and the periodic RA updating is T3312
7	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI and TMSI not included. Update result = 'RAUpdated' P-TMSI-3 signature Routing area identity = RAI-1
8	UE			The UE is switched off or power is removed (see ICS).
9	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
10	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

## Specific message contents

None.

## 12.4.3.2.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step5, when the timer T3312 is expired, UE shall:

- initiate the routing area updating procedure with Update type = 'Periodic updating'.

### 12.4.3.3 Periodic routing area updating / no cell available / network mode I

#### 12.4.3.3.1 Definition

#### 12.4.3.3.2 Conformance requirement

If the UE is both IMSI attached for PS and non-PS services, and if the UE lost coverage of the registered PLMN and timer T3312 expires; if the UE returns to coverage in a cell that supports PS and the network is in network operation mode I, then the UE shall perform a combined routing area update procedure indicating 'combined RA/LA updating with IMSI attach'.

#### Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.1.

#### 12.4.3.3.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

#### 12.4.3.3.4 Method of test

#### Initial condition

##### System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).  
Cell A is operating in network operation mode II and cell B is in network operation mode I.

##### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Idle updated on Cell A

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The UE initiates a PS attach procedure. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. PS radio contact is distorted before T3312 timeout. PS radio contact is established again (after T3312 timeout), and a routing area updating procedure is performed immediately.

T3312; set to 6 minutes.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2		SS		The UE is set in UE operation mode A (see ICS).
3		UE		The UE is powered up or switched on and initiates an attach (see ICS).
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
6		->	ATTACH COMPLETE	
7		SS		After 5 minutes, the signal strength is lowered until the UE has lost contact with the SS. Set the cell type of cell A to the "non-suitable cell".(see note)
8		SS		Wait 2 minutes.
9		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell B to the "Serving cell". (see note)
10		UE		Cell B is preferred by the UE.
11		UE		The UE immediately starts a combined RA updating procedure
12		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted.
13		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-3 P-TMSI-3 signature Mobile identity = TMSI-2 Routing area identity = RAI-4
14		->	ROUTING AREA UPDATE COMPLETE	
15		UE		The UE is switched off or power is removed (see ICS).
16		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
17		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

#### 12.4.3.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step12, when the UE is both IMSI attached for PS and non-PS service , and if the UE lost coverage of the reiterated PLMN and the timer T3312 expires, if the UE returns to coverage in a cell that supports PS and the network is in network oration mode I, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

#### 12.4.3.4 Periodic routing area updating / no cell available

##### 12.4.3.4.1 Definition

##### 12.4.3.4.2 Conformance requirement

If the UE is both IMSI attached for PS and non-PS services, and if the UE lost coverage of the registered PLMN and timer T3312 expires; if the UE returns to coverage in a cell that supports PS and the network is in network operation mode II, then the UE shall perform a periodic routing area update procedure and a periodic location update procedure.

##### Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.2.

##### 12.4.3.4.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

##### 12.4.3.4.4 Method of test

##### Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Idle updated on Cell A

##### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

##### Test procedure

The UE initiates a PS attach procedure. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. PS radio contact is distorted before T3312 timeout. PS radio contact is established again (after T3312 timeout), and a periodic routing area updating procedure is performed immediately (no periodic location update procedure is performed as T3212=infinity).

T3312; set to 6 minutes.

#### Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
2a	<-		AUTHENTICATION AND CIPHERING REQUEST	
2b	->		AUTHENTICATION AND CIPHERING RESPONSE	
2c	SS			The SS starts integrity protection.
3	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
4	->		ATTACH COMPLETE (void)	
5-12	SS			After 5 minutes, the signal strength is lowered until the UE have lost contact with the SS.
13	SS			After 2 minutes, the signal strength is increased until the UE have got contact with the SS.
14	SS			The UE immediately start the periodic RA updating procedure
15	UE			Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1
16	->		ROUTING AREA UPDATE REQUEST	No new mobile identity assigned. P-TMSI not included. Update result = 'RAUpdated' P-TMSI-3 signature Routing area identity = RAI-1
17	<-		ROUTING AREA UPDATE ACCEPT	
18	UE			The UE is switched off or power is removed (see ICS).
19	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
20	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

#### Specific message contents

#### RRC System information block type 1

Information element	Comment Value
T3212 (Periodical Location updating)	Infinity

#### 12.4.3.4.5 Test requirements

At step2, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step16, when the UE is both IMSI attached for PS and non-PS service, and if the UE lost coverage of the reiterated PLMN and the timer T3312 expires, if the UE returns to coverage in a cell in the same RA that supports PS and that indicates that the network is in network operation mode II, UE shall:



- perform the periodic routing area updating procedure indicating "Periodic updating".

## 12.5 P-TMSI reallocation

### 12.5.1 Definition

### 12.5.2 Conformance requirement

- 1) A User Equipment shall acknowledge a new P-TMSI when explicitly allocated.
- 2) The P-TMSI shall be updated on the USIM when the User Equipment is correctly deactivated in accordance with the manufacturer's instructions.
- 3) A User Equipment shall use the given P-TMSI in further communication with the network.

### Reference

3GPP TS 24.008 clause 4.7.6.

### 12.5.3 Test purpose

To verify that the UE is able to receive and acknowledge a new P-TMSI by means of an explicit P-TMSI reallocation procedure.

To verify that the UE has stored the P-TMSI in a non-volatile memory.

The implicit reallocation procedure is tested in the attach procedure.

### 12.5.4 Method of test

#### Initial condition

System Simulator:

One cell operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No (only if mode A not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

An explicit P-TMSI reallocation procedure is performed (P-TMSI reallocation command sent from the SS and acknowledged from the UE by P-TMSI reallocation complete). The UE is PS detached and switched off. Its power supply is interrupted for 10 seconds. The power supply is resumed and then the UE is switched on. A PS attach procedure is performed with the given P-TMSI as identity.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS). If UE operation mode A not supported set the UE in operation mode C.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	<-		P-TMSI REALLOCATION COMMAND	Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
7	->		P-TMSI REALLOCATION COMPLETE	
8	UE			The UE is switched off or power is removed (see ICS).
8a	SS			SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
9	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
9a	SS			If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
10	UE			Ensure the power is removed from the UE for at least 10 seconds
11	UE			The UE is powered up or switched on and initiates an attach (see ICS).
11a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
12	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-2 Routing area identity = RAI-1
12a	<-		AUTHENTICATION AND CIPHERING REQUEST	
12b	->		AUTHENTICATION AND CIPHERING RESPONSE	
12c	SS			The SS starts integrity protection.
13	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'PS only attached' P-TMSI-3 signature Routing area identity = RAI-1
13a	SS			The SS releases the RRC connection and waits 5s to allow the UE to read system information.
14	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services. Paging cause = "Terminating interactive call".

15	SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
16		Void	
17		Void	
18	->	SERVICE REQUEST	service type = "paging response"
18a	SS		The SS starts integrity protection.
19	SS		The SS releases the RRC connection.
20		Void	
21	UE		The UE is switched off or power is removed (see ICS).
21a	SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
22	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
23	SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .

### Specific message contents

None.

#### 12.5.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the UE receives P-TMSI REALLOCATION COMMAND message from SS, UE shall:

- acknowledge the new P-TMSI by sending P-TMSI REALLOCATION COMPLETE message.

At step12, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step18, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

## 12.6 PS authentication

### 12.6.1 Test of authentication

The purpose of this procedure is to verify the user identity. A correct response is essential to guarantee the establishment of the connection. If not, the connection will drop.

#### 12.6.1.1 Authentication accepted

##### 12.6.1.1.1 Definition

##### 12.6.1.1.2 Conformance requirement

A User Equipment shall correctly respond in an authentication and ciphering procedure by sending a response with the RES information field set to the same value as the one produced by the authentication and ciphering algorithm in the network.

## Reference

3GPP TS 24.008 clause 4.7.7.

## 12.6.1.1.3 Test purpose

To test the behaviour of the UE if the network accepts the authentication and ciphering procedure.

## 12.6.1.1.4 Method of test

## Initial condition

## System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).  
Both cells are operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A) in both cells.

## User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

The SS checks the value RES sent by the UE in the AUTHENTICATION AND CIPHERING RESPONSE message.

The UE initiates a routing area updating procedure and the SS checks the value of the PS Ciphering Key Sequence Number sent by the UE in the ROUTING AREA REQUEST message.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 17.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
5		<-	AUTHENTICATION AND CIPHERING REQUEST	Request authentication.
6		->	AUTHENTICATION AND CIPHERING RESPONSE	Set PS-CKSN-1 RES
7		SS		The SS checks the RES value and starts integrity protection.
8		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
9		->	ATTACH COMPLETE	
9a		SS		The SS releases the RRC connection.
10		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
10a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1 PS-CKSN-1
12		SS		The value of PS-CKSN is checked. Integrity protection is started.
13		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
14		->	ROUTING AREA UPDATE COMPLETE	
15	UE			The UE is switched off or power is removed (see ICS).
16		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
16a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
17		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)

18	UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 3 to step 16a.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.6.1.1.5 Test requirements

At steps 3a and 10a the UE shall transmit an RRC CONNECTION REQUEST message with the IE "Establishment cause" set to "Registration".

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST message form SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message with the RES information field set to the same value as the one produced by the authentication and ciphering algorithm in the network.

At step11, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- perform routing area updating procedure.

#### 12.6.1.2 Authentication rejected by the network

##### 12.6.1.2.1 Definition

##### 12.6.1.2.2 Conformance requirement

Upon receipt of an AUTHENTICATION AND CIPHERING REJECT message, the UE shall set the PS update status to GU3 ROAMING NOT ALLOWED and shall delete the P-TMSI, P-TMSI signature, RAI and PS ciphering key sequence number stored.

The USIM shall be considered as invalid until switching off or the USIM is removed.

If the AUTHENTICATION AND CIPHERING REJECT message is received, the UE shall abort any GMM procedure, shall stop the timers T3310 and T3330 (if running) and shall enter state GMM-DEREGISTERED.

### Reference

3GPP TS 24.008 clauses 4.7.7.5.

##### 12.6.1.2.3 Test purpose

To test the behaviour of the UE if the network rejects the authentication and ciphering procedure.

##### 12.6.1.2.4 Method of test

### Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).

Both cells are operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

#### User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The test sequence is repeated for  $K = 1, 2$ .

A complete PS attach procedure is performed. The SS rejects the following authentication and ciphering procedure. The UE is paged with its former P-TMSI and shall not respond.

The Cell is changed into a new Routing Area.

The SS checks that the UE does not perform normal routing area updating.

The SS then checks that the UE does not perform a PS detach.

The SS checks that the UE does not perform a PS Attach procedure.

#### Expected Sequence

The test sequence is repeated for  $k = 1, 2$

For  $k = 1$ , the UE is set in UE operation mode C. If MS operation mode C not supported then  $k = 2$ .

For  $k = 2$  the UE is set in UE operation mode A.

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2		UE		The UE is powered up or switched on and initiates an attach (see ICS).
2a		<del>UE</del>	<del>Registration on CS</del> <a href="#">Void</a>	<del>See TS 34.108</del> <del>This is applied only for UE in UE operation mode A.</del>
2b		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
4			Void	
5			Void	
6		<-	AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Set PS-CKSN-1
7		->	AUTHENTICATION AND CIPHERING RESPONSE	RES
8		<-	AUTHENTICATION AND CIPHERING REJECT	
8a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
9		<-	PAGING TYPE1	Mobile identity = IMSI Paging order is for PS services.
10		UE		No response from the UE to the request. This is checked for 10 seconds.
11		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
12		UE		Cell B is preferred by the MS.
13		UE		No ROUTING AREA UPDATE REQUEST sent to the SS (SS waits 30 seconds).
14		UE		If possible (see ICS) the UE initiates an attach by MMI or by AT command.
15		UE		No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
16		UE		The UE is switched off (see ICS).
17		SS		No DETACH REQUEST sent to the SS (SS waits 30 seconds).
18				The UE is powered up or switched on and initiates an attach (see ICS). Step 19 is only performed for k =2
19		<del>UE</del>	<del>Registration on CS</del> <a href="#">Void</a>	<del>Parameter mobile identity is IMSI.</del> <del>See TS 34.108</del>
19a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20		->	ATTACH REQUEST	Attach type = 'PS only attached' Mobile identity = IMSI
20a		<-	AUTHENTICATION AND CIPHERING REQUEST	
20b		->	AUTHENTICATION AND CIPHERING RESPONSE	
20c		SS		The SS starts integrity protection.



21	<-	ATTACH ACCEPT	Attach result = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
22	->	ATTACH COMPLETE	
22a	SS		The SS releases the RRC connection.
23	UE		The UE is switched off or power is removed. (see ICS)
23a	SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
24	->	DETACH REQUEST	Message not sent if power is removed.
24a	SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
25	UE		If k=1 then the test is repeated for k=2.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.6.1.2.5 Test requirements

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the UE receives the AUTHENTICATION AND CIPHERING REJECT message, UE shall:

- not respond paging message for PS domain.

At step13, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- not perform normal routing area updating.

At step17, when the UE is switched off, UE shall:

- not perform PS detach procedure.

### 12.6.1.3 Authentication rejected by the UE

#### 12.6.1.3.1 GMM cause 'MAC failure'

##### 12.6.1.3.1.1 Definition

##### 12.6.1.3.1.2 Conformance requirement

If the UE considers the MAC code (supplied by the core network in the AUTN parameter) to be invalid, the UE shall send AUTHENTICATION AND CIPHERING FAILURE message with the reject cause 'MAC failure' to the System Simulator.

### Reference

3GPP TS 24.008 clause 4.7.7.

### 12.6.1.3.1.3 Test purpose

To test the behaviors of the UE, when the UE considers the MAC code (supplied by the core network in the AUTN parameter) to be invalid.

### 12.6.1.3.1.4 Method of test

#### Initial condition

#### System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).

Both cells are operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

The MAC (Message Authentication Code) code, which is included in AUTHENTICATION AND CIPHERING REQUEST, is invalid value.

#### User Equipment:

The UE has a valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

The UE sends AUTHENTICATION AND CIPHERING FAILURE message with reject cause 'MAC failure' to the SS.

The SS initiates an identification procedure, upon receipt of a failure message with reject cause 'MAC failure'.

After the identification procedure is complete, the SS re-initiates an authentication and ciphering procedure.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note 1)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, goto step 25.
3	UE			
4				The following messages are sent and shall be received on cell A.
5	UE			The UE is powered up or switched on and initiates an attach (see ICS).
5a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
6	->		ATTACH REQUEST	Attach type = 'PS attach' Mobility identity = IMSI
7	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Invalid Message Authentication Code (MAC).
9	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure'
9a	<-		IDENTITY REQUEST	Identity type = IMSI
9b	->		IDENTITY RESPONSE	Mobile identity = IMSI
10	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Including PS-CSKN-1
11	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
12		SS		The SS checks the RES value and starts integrity protection.
13			Void	
14			Void	
15			Void	
16	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	
17a		SS		The SS releases the RRC connection.
18		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note 1)
18a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
19	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1 PS-CKSN-1
20		SS		The SS checks the value of PS-CKSN and starts integrity protection.
21	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
22	->		ROUTING AREA UPDATE COMPLETE	
23	UE			The UE is switched off or power is removed (see ICS).

24	->	DETACH REQUEST	Message is not sent if power is removed. Detach type = 'power switched off, PS detach'
24a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
25	UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 1 to step 24.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.6.1.3.1.5 Test requirements

At step6, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information element specified in the above Expected Sequence.

At step9, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST with Invalid Message Authentication Code, UE shall:

- send the AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS

At step11, when the UE receives the second AUTHENTICATION AND CIPHERING REQUEST message (containing a valid MAC) from SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message to SS.

At step9b, when the UE receives the IDENTITY REQUEST message with Identity type = IMSI from SS, UE shall:

- send the IDENTITY RESPONSE message with Mobile identity = IMSI to SS.

#### 12.6.1.3.2 GMM cause 'Synch failure'

##### 12.6.1.3.2.1 Definition

##### 12.6.1.3.2.2 Conformance requirement

If the UE considers the SQN (supplied by the core network in the AUTN parameter) to be out of range, the UE shall send AUTHENTICATION AND CIPHERING FAILURE message with the reject cause 'Synch failure' to the System Simulator.

### Reference

3GPP TS 24.008 clause 4.7.7.

##### 12.6.1.3.2.3 Test purpose

To test the behaviors of the UE, when the UE considers the SQN (supplied by the core network in the AUTN parameter) to be out of range.

##### 12.6.1.3.2.4 Method of test

### Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).

Both cells are operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No  
 UE operation mode A Yes/No  
 UE operation mode C Yes/No  
 Switch off on button Yes/No  
 Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

UE sends AUTHENTICATION AND CIPHERING FAILURE message with reject cause 'synch failure' to the SS.

SS re-initiates an authentication and ciphering procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell".
2	UE			(see note 1) The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, goto step 21.
3	UE			The following messages are sent and shall be received on cell A. The UE is powered up or switched on and initiates an attach (see ICS).
3a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobility identity = IMSI
5		<-	AUTHENTICATION AND CIPHERING REQUEST	Request authentication. SQN is out of range.
6			Void	
7		->	AUTHENTICATION AND CIPHERING FAILURE	GMM cause = 'Synch failure' AUTS parameter
8		SS		set new authentication vectors. (re-synchronisation)
9		<-	AUTHENTICATION AND CIPHERING REQUEST	Request authentication.
10		->	AUTHENTICATION AND CIPHERING RESPONSE	Including PS-CKSN-1 RES
11		SS		The SS checks the RES value and starts integrity protection.
12		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
13		->	ATTACH COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
13a	SS			The SS releases the RRC connection.
14	SS			The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note 1)
14a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
15	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1 PS-CKSN-1
16	SS			The SS checks the value of PS-CKSN and starts integrity protection
17	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
18	->		ROUTING AREA UPDATE COMPLETE	
19	UE			The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message is not sent if power is removed. Detach type = 'power switched off, PS detach'
20a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
21	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 1 to step 20.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause6.1 "Reference Radio Conditions for signalling test cases only".				

#### Specific message contents

None.

#### 12.6.1.3.2.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information element specified in the above Expected Sequence.

At step7, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST message(SQN is out of range.), UE shall:

- send the AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'synch failure' to the SS

At step9, when the UE receives the second AUTHENTICATION AND CIPHERING REQUEST message from SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message to SS.

At step15, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- perform routing area updating procedure.

### 12.6.1.3.3 Authentication rejected by the UE / fraudulent network

#### 12.6.1.3.3.1 Definition

#### 12.6.1.3.3.2 Conformance requirement

R99 and REL-4:

1. It can be assumed that the source of the authentication challenge is not genuine (authentication not accepted by the UE) if any of the following occur:
  - After sending the AUTHENTICATION & CIPHERING FAILURE message with GMM cause 'MAC failure' the timer T3318 expires;
  - Upon receipt of the second AUTHENTICATION & CIPHERING REQUEST message from the network while the T3318 is running and the MAC value cannot be resolved.

When it has been deemed by the MS that the source of the authentication challenge is not genuine (authentication not accepted by the MS), the MS shall behave as described in 3GPP 24.008 clause 4.7.7.6.1.

2. In addition to the cases specified in subclause 4.7.7.6, the UE may deem that the network has failed the authentication check after any combination of three consecutive authentication failures, regardless whether 'MAC failure', 'invalid SQN', or 'GSM authentication unacceptable' was diagnosed. The authentication failures shall be considered as consecutive only, if the authentication challenges causing the second and third authentication failure are received by the UE, while the timer T3318 or T3320 started after the previous authentication failure is running.

If the UE deems that the network has failed the authentication check, then it shall request RR or RRC to release the RR connection and the PS signalling connection, if any, and bar the active cell or cells (see 3GPP TS 25.331 and 3GPP TS 04.18).

#### Reference

3GPP TS 24.008 clause 4.7.7.6 (f) and 4.7.7.6.1.

REL-5 and later releases:

1. It can be assumed that the source of the authentication challenge is not genuine (authentication not accepted by the UE) if any of the following occurs:
  - after sending the AUTHENTICATION & CIPHERING FAILURE message with GMM cause 'MAC failure' the timer T3318 expires;
  - the MS detects any combination of the authentication failures: "MAC failure", "invalid SQN", and "GSM authentication unacceptable", during three consecutive authentication challenges. The authentication challenges shall be considered as consecutive only, if the authentication challenges causing the second and third authentication failure are received by the MS, while the timer T3318 or T3320 started after the previous authentication failure is running.

When it has been deemed by the MS that the source of the authentication challenge is not genuine (authentication not accepted by the MS), the MS shall behave as described in 3GPP TS 24.008 subclause 4.7.7.6.1.

2. If the UE deems that the network has failed the authentication check, then it shall request RR or RRC to release the RR connection and the PS signalling connection, if any, and bar the active cell or cells (see 3GPP TS 25.331 and 3GPP TS 44.018).

#### Reference

3GPP TS 24.008 clause 4.7.7.6 (f) and 4.7.7.6.1.

### 12.6.1.3.3.3 Test purpose

R99 and REL-4

To test UE treating a cell as barred:

1. when the network sends the second or third AUTHENTICATION & CIPHERING REQUEST message with invalid MAC code during the timer T3318 is running.
2. when the timer T3318 has expired.

REL-5 or later release:

To test UE treating a cell as barred:

1. when the network sends the third AUTHENTICATION & CIPHERING REQUEST message with invalid MAC code during the timer T3318 is running.
2. when the timer T3318 has expired.

### 12.6.1.3.3.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1(RAI-1), cell B in MCC1/MNC1/LAC1/RAC2(RAI-2).

Both cells are operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.](#)

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

Two cells are configured. Cell A transmits with higher power so that the UE attempts an attach procedure to cell A.

During the attach procedure, the SS initiates an authentication and ciphering procedure but it sends an incorrect Message Authentication Code (MAC) value in its AUTHENTICATION AND CIPHERING REQUEST message.

The UE sends AUTHENTICATION AND CIPHERING FAILURE message to the SS indicating authentication failure.

The SS repeats a second time the authentication procedure, again with an incorrect Message Authentication Code (MAC) value in its AUTHENTICATION AND CIPHERING REQUEST message.

For R99 and REL-4: SS waits 30 seconds. If the UE sends an AUTHENTICATION AND CIPHERING FAILURE message during this time then the SS repeats the authentication procedure a third time and then waits 30 seconds. The UE moves into idle mode and do not make any access attempt on Cell A.

For REL-5 or later release: The SS repeats a third time the authentication procedure, again with an incorrect Message Authentication Code (MAC) value in its AUTHENTICATION AND CIPHERING REQUEST message. The UE moves into idle mode and do not make any access attempt on Cell A.

The UE shall attempt to attach to cell B. The SS initiates an authentication and ciphering procedure but it sends an incorrect Message Authentication Code (MAC) value in its AUTHENTICATION AND CIPHERING REQUEST



message. The UE sends AUTHENTICATION AND CIPHERING FAILURE message to the SS indicating authentication failure.

The SS waits for T3318 to expire.

The UE shall treat now both cells as barred and shall not attempt to access the network, even if the user triggers the UE to perform an attach procedure.

#### Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The following messages are sent and shall be received on cell A.
3	->		ATTACH REQUEST	The UE is powered up or switched on and initiates an attach procedure. Attach type = 'PS attach' Mobility identity = IMSI
4	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication.
5	->		AUTHENTICATION AND CIPHERING FAILURE	Invalid Message Authentication Code (MAC). GMM cause='MAC failure'
6	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication.
7	->		AUTHENTICATION AND CIPHERING FAILURE	Invalid Message Authentication Code (MAC). GMM cause='MAC failure'
7a	<-		AUTHENTICATION AND CIPHERING REQUEST	R99 and REL-4: In case message is not received within 30s then SS should continue from step 9. Request for authentication.
7b			Void	Invalid Message Authentication Code (MAC). R99 and REL-4: Optional step
8		SS		SS verifies that the UE does not attempt to access the network for 30s. R99 and REL-4: Optional step
9		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
10	UE			UE shall attempt an attach on cell B. The following messages are sent and shall be received on cell B.
11	->		ATTACH REQUEST	The UE initiates an attach by MMI or AT command. Attach type = 'PS attach' Mobility identity = IMSI
12	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication.
13	->		AUTHENTICATION AND CIPHERING FAILURE	Invalid Message Authentication Code (MAC). GMM cause='MAC failure'
14		SS		SS waits T3318 (20s)
15		SS		SS verifies that the UE does not attempt to access the network for 30s.
16	UE			The UE initiates an attach by MMI or AT command.
17		SS		SS verifies that the UE does not attempt to access the network for 30s.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

#### 12.6.1.3.3.5 Test requirements

At step3, when the UE is powered on or switched on, the UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

After step4, when the UE have received the first AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall:

- send the AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS.

For R99 and REL-4 UE:

Alternative 1:

- After step 6, when the UE have received the second AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall not attempt to access the network.

Alternative 2:

- After step6, when the UE have received the second AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC) while the timer T3318 is running, the UE shall send an AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS; and
- After step 7a , when the UE have received the third AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall not attempt to access the network.

For REL-5 UE:

- After step 6, when the UE receives the second AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC) from the network while the timer T3318 is running, the UE shall send an AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS; and
- After step 7a, when the UE have received the third AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall not attempt to access the network.

At step 11, when the activated cell is changed from cell A to cell B, the UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

After step 12, when the UE have received the AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall:

- send an AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS.

At step 17, when the timer T3318 have expired, the UE shall:

- not attempt to access the network.

## 12.6.2 Void

## 12.7 Identification procedure

The purpose of this procedure is to check that the UE gives its identity as requested by the network. If this procedure does not work, it will not be possible for the network to rely on the identity claimed by the UE.

## 12.7.1 General Identification

### 12.7.1.1 Definition

### 12.7.1.2 Conformance requirement

- 1) When requested by the network the User Equipment shall send its IMSI.
- 2) When requested by the network the User Equipment shall send its IMEI as stored in the Mobile Equipment.
- 3) When requested by the network the User Equipment shall send its IMEISV as stored in the Mobile Equipment.

### Reference

3GPP TS 24.008 clauses 4.7.8

### 12.7.1.3 Test purpose

To verify that the UE sends identity information as requested by the system. The following identities can be requested: IMSI, IMEI and IMEISV.

### 12.7.1.4 Method of test

#### Initial condition

#### System Simulator:

One cell operating in network mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

#### User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS requests identity information from the UE:

- IMSI
- IMEI
- IMEISV

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The UE is set to attach to PS services only (see ICS). If that is not supported by the UE, goto step 14.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
4			Void	
5	<-		AUTHENTICATION AND CIPHERING REQUEST	
5a	->		AUTHENTICATION AND CIPHERING RESPONSE	
5b		SS		The SS starts ciphering and integrity protection.
6	<-		IDENTITY REQUEST	Identity type = IMSI
7	->		IDENTITY RESPONSE	Mobile identity = IMSI
8	<-		IDENTITY REQUEST	Identity type = IMEI
9	->		IDENTITY RESPONSE	Mobile identity = IMEI
10	<-		IDENTITY REQUEST	Identity type = IMEISV
11	->		IDENTITY RESPONSE	Mobile identity = IMEISV
11a	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
11b	->		ATTACH COMPLETE	
11c		SS		The SS releases the RRC connection.
12	UE			The UE is switched off or power is removed (see ICS).
12a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not received if power is removed).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
13a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
14	UE			The UE is set to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 13a.

## Specific message contents

None.

## 12.7.1.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 12a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step 3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step 7, when the SS requests an IMSI with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMSI.

At step9, when the SS requests an IMEI with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMEI.

At step11, when the SS requests an IMEISV with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMEISV.

## 12.8 GMM READY timer handling

### 12.8.1 Definition

### 12.8.2 Conformance requirement

If a READY timer value is received by an UE capable of both UMTS and GSM in the ATTACH ACCEPT or the ROUTING AREA UPDATE ACCEPT messages, then the received value shall be stored by the UE in order to be used at an intersystem change from UMTS to GSM.

### Reference

3GPP TS 24.008 clause 4.7.2.1

### 12.8.3 Test purpose

To verify that READY timer value received in UTRA can be used in GSM.

### 12.8.4 Method of test

#### 12.8.4.1 Test procedure

### Initial condition

### System Simulator:

Two cells (not simultaneously activated), cell A (UTRAN) in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B (GSM) in MCC1/MNC1/LAC1/RAC2 (RAI-4).

Cell B is in neighbour cell list of cell A.

Both cells are operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in cell A \(UTRAN\).](#)

[The value of ATT flag in SIB3 IE "Control Channel Description" is set to value "0" in cell B \(GSM\).](#)

### User Equipment:

The UE has a valid IMSI.

### Related ICS/IXIT statements

UE supports both GSM/GPRS and UTRAN Radio Access Technologies Yes/No

UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

An attach is performed.

T3314; set to 60 seconds

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Cell B is switched off. (see note)
2		UE		The UE is set in UE operation mode A (see ICS). If UE operation mode A not supported set the UE in operation mode C. The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 T3314 = 60 seconds T3312=6 minutes
5		->	ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell".
7		UE		UE establish cell reselection to GSM system The following messages are received on Cell B (GERAN)
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
9		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
10		->	ROUTING AREA UPDATE COMPLETE	
11		SS		The SS verifies that the time between the end of Step 10 and the periodic RA updating is Ready Timer Period (T3314) + Periodic Routing Area Updating timer (T3312) (+/- 10%)
12		->	ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' Mobile identity=P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
13		<-	ROUTING AREA UPDATE ACCEPT	Update type = 'RA updated'
14		UE		UE is switched off or power is removed (see ICS)
15		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
NOTE:	The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

#### 12.8.5 Test requirements

At step4, when the UE receives the ATTACH ACCEPT or the ROUTING AREA UPDATE ACCEPT messages, UE shall:

- store the received READY timer value.

At step12, UE shall establish periodic Routing Area Update after Timer Period (T3314) + Periodic Routing Area Updating timer (T3312) (+/- 10%).

## 12.9 Service Request procedure (UMTS Only)

### 12.9.1 Service Request Initiated by UE Procedure

#### 12.9.1.1 Definition

#### 12.9.1.2 Conformance requirement

UE shall send the Service Request message to the network in order to establish the PS signalling connection for the upper layer signalling or for the resource reservation for active PDP context(s).

#### Reference

TS 24.008 clauses 4.7.13

TS 23.060 clauses 6.12.1

#### 12.9.1.3 Test purpose

To test the behaviour of the UE if the UE initiates the CM layer service (e.g. SM or SMS) procedure.

#### 12.9.1.4 Method of test

#### Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid IMSI

The UE has been registered in the CS domain.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No



## Test procedure

- a) The UE in PMM-IDLE state sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.
- b) After the SS receives the SERVICE REQUEST message, the SS performs authentication procedure.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to PS services only (see ICS). If that is not supported by the UE, goto step 12.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts ciphering and integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
6a	SS			The IE "Establishment cause" in the received RRC CONNECTION REQUEST message is not checked.
7	->		SERVICE REQUEST	Service type = "signalling",
8	<-		AUTHENTICATION AND CIPHERING REQUEST	
9	->		AUTHENTICATION AND CIPHERING RESPONSE	
9a	SS			The SS starts integrity protection and releases the RRC connection.
10	UE			The UE is switched off or power is removed (see ICS).
10a	SS			The SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST is set to "Detach" (not received if power is removed).
11	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
11a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
12	UE			The UE is set to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 11a.

## Specific message contents

None.

### 12.9.1.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 10a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step 3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step 7, when the UE has any signalling message (e.g. for SM or SMS) that requires security protection, the UE shall:

- send the SERVICE REQUEST message with service type indicated "signalling".

## 12.9.2 Service Request Initiated by Network Procedure

### 12.9.2.1 Definition

### 12.9.2.2 Conformance requirement

When the UE receives a paging request for PS domain from the network in PMM-IDLE mode, the UE shall send the SERVICE REQUEST message to the network.

### Reference

TS 24.008 clauses 4.7.13

TS 23.060 clauses 6.12.2

### 12.9.2.3 Test purpose

To test the behavior of the UE if the UE receives the paging request for PS domain service from the network.

### 12.9.2.4 Method of test

### Initial condition

#### System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

#### User Equipment:

The UE has a valid IMSI

The UE has been registered in the CS domain.

### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

## Test procedure

- a) The UE is in PMM-IDLE state. The SS pages the UE by sending a Paging message to the UE.
- b) The UE sends a SERVICE REQUEST message to the SS. Service Type specifies Paging Response. The Service Request is carried over the radio in an RRC Direct Transfer message.
- c) After the SS receives the SERVICE REQUEST message from the UE, SS initiates an authentication procedure.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to PS services only (see ICS). If that is not supported by the UE, goto step 12.
2	UE			The UE is powered up or switched in and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts ciphering and integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating interactive call"
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
7	->		SERVICE REQUEST	Service type = "Paging response"
8	<-		AUTHENTICATION AND CIPHERING REQUEST	
9	->		AUTHENTICATION AND CIPHERING RESPONSE	
9a	SS			SS starts integrity protection and releases the RRC connection.
10	UE			The UE is switched off or power is removed (see ICS).
10a	SS			SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
11	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
11a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
12	UE			The UE is set to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 11a.

Specific message contents

None.

#### 12.9.2.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Terminating interactive Call".

At step 10a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives a paging request for PS domain from the network in PMM-IDLE mode, the UE shall:

- send the SERVICE REQUEST message with service type indicated "paging response".

### 12.9.3 Service Request / rejected / Illegal MS

#### 12.9.3.1 Definition

#### 12.9.3.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "Illegal MS", the UE shall:

- 1) set the GPRS update status to GU3 ROAMING NOT ALLOWED and enter state GMM DEREGISTERED. A UE operating in MS operation A shall in addition to set the update status to U3 ROAMING NOT ALLOWED.
- 2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. A UE operating in MS operation A shall in addition delete any TMSI, LAI and ciphering key sequence number.
- 3) consider the USIM as invalid for PS service until switched off or the USIM is removed.

#### Reference

TS 24.008 clauses 4.7.13.4

#### 12.9.3.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "Illegal MS".

#### 12.9.3.4 Method of test

#### Initial condition

#### System Simulator:

One cell operating in network operation mode II.  
[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

#### User Equipment:

The UE has a valid P-TMSI-1, RAI-1 and IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

#### Test procedure

- a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.
- b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #3(Illegal MS).
- c) After the UE receives the SERVICE REJECT message with the cause value #3(Illegal MS), the UE deletes any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.
- d) The SS checks that the UE does not initiate an upper-layer signalling until the power of the UE is switched off.
- e) The SS checks that the UE does not initiate an upper-layer signalling until the USIM is removed from the UE.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following message are sent and shall be received on cell A.
2	SS			The UE is set in UE operation mode C (see ICS).
3	UE			The SS is set in network operation mode II and activates cell A.
3a	SS			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
6			Void	
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "Illegal MS"
10	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
11	SS			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds)
12	UE			The UE is switched off.
13			Void	
14	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
14a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
15	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
15a	<-		AUTHENTICATION AND CIPHERING REQUEST	
15b	->		AUTHENTICATION AND CIPHERING RESPONSE	
15c	SS			The SS starts ciphering and integrity protection.
16	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	
18	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
19	->		SERVICE REQUEST	Service type = "signalling"
20	<-		SERVICE REJECT	Reject cause = "Illegal MS"

Step	Direction		Message	Comments
	UE	SS		
21	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
22	SS			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds)
23	UE			If possible (see ICS) USIM replacement is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed
24			Void	
25	UE			The UE initiates a PS attach, by MMI or by AT command.
25a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
26	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
26a	<-		AUTHENTICATION AND CIPHERING REQUEST	
26b	->		AUTHENTICATION AND CIPHERING RESPONSE	
26c	SS			The SS starts ciphering and integrity protection.
27	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
28	->		ATTACH COMPLETE	
29	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
30	->		SERVICE REQUEST	Service type = "signalling"
31	<-		AUTHENTICATION AND CIPHERING REQUEST	
32	->		AUTHENTICATION AND CIPHERING RESPONSE	
33	SS			The SS initiate a security mode control procedure.
34	SS			After the security mode control procedure is completed, the SS releases RRC connection.
35	UE			The UE is switched off or power is removed (see ICS).
36	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
37	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

### Specific message contents

None.

#### 12.9.3.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "Illegal MS" UE shall:

- not attempt to access the network.

At step15, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step22, when the UE receives the SERVICE REJECT message with cause "Illegal MS" UE shall:

- not attempt to access the network.

At step26, when the UE gets the USIM replaced, is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step30, UE shall:

- initiate the service request procedure.

## 12.9.4 Service Request / rejected / PS services not allowed

### 12.9.4.1 Definition

#### 12.9.4.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "PS services not allowed", the UE shall:

- 1) set the GPRS update state to GU3 ROAMING NOT ALLOWED.
- 2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.
- 3) consider the USIM as invalid for PS service until the UE is switched off or until the USIM is removed.

### Reference

TS 24.008 clauses 4.7.13.4

#### 12.9.4.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "PS service not allowed".

#### 12.9.4.4 Method of test

### Initial condition

System Simulator:

One cell operating in network operation mode II.  
[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No



## Test procedure

- a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.
- b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #7(PS services not allowed).
- c) After the UE receives the SERVICE REJECT message with the cause value #7(PS services not allowed), the UE deletes any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.
- d) The SS checks that the UE does not initiate an upper-layer signalling until the UE is switched off.
- e) The SS checks that the UE does not initiate an upper-layer signalling until the USIM is removed from the UE.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following message are sent and shall be received on cell A.
2	SS			The UE is set in UE operation mode C (see ICS).
3	UE			The SS is set in network operation mode II and activates cell A.
3a	SS			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
6			Void	
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "PS services not allowed"
10	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
11	SS			The SS verifies that the UE does not attempt to access the network. (SS wait 30seconds)
12	UE			The UE is switched off.
13			Void	
14	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
14a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
15	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
15a	<-		AUTHENTICATION AND CIPHERING REQUEST	
15b	->		AUTHENTICATION AND CIPHERING RESPONSE	
15c	SS			The SS starts ciphering and integrity protection.
16	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
17	->		ATTACH COMPLETE	
18	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
19	->		SERVICE REQUEST	Service type = "signalling"
20	<-		SERVICE REJECT	Reject cause = "PS services not allowed"
21	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.

Step	Direction		Message	Comments
	UE	SS		
22		SS		The SS verifies that the UE does not attempt to access the network. (SS wait 30seconds) The UE gets the USIM replaced, is powered up or switched on.
23		UE		
24			Void	
25		UE		The UE initiates a PS attach, by MMI or by AT command.
25a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". Attach type = 'PS attach' Mobile identity = IMSI  The SS starts ciphering and integrity protection. Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-3
26	->		ATTACH REQUEST	
26a	<-		AUTHENTICATION AND CIPHERING REQUEST	
26b	->		AUTHENTICATION AND CIPHERING RESPONSE	
26c	SS			
27	<-		ATTACH ACCEPT	
28	->		ATTACH COMPLETE	
29		UE		
30	->		SERVICE REQUEST	The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command. Service type = "signalling"
31	<-		AUTHENTICATION AND CIPHERING REQUEST	The SS initiate a security mode control procedure. After the security mode control procedure is completed, the SS releases RRC connection.
32	->		AUTHENTICATION AND CIPHERING RESPONSE	
33	SS			
34	SS			
35		UE		The UE is switched off or power is removed (see ICS). Message not sent if power is removed. Detach type = 'power switched off, PS detach'
36	->		DETACH REQUEST	
37		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

## Specific message contents

### 12.9.4.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "PS services not allowed" UE shall:

- not attempt to access the network.

At step15, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step22, when the UE receives the SERVICE REJECT message with cause "PS services not allowed" UE shall:

- not attempt to access the network.

At step26, when the UE gets the USIM replaced, is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step30, UE shall:

- initiate the service request procedure.

## 12.9.5 Service Request / rejected / MS identity cannot be derived by the network

### 12.9.5.1 Definition

### 12.9.5.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "MS identity cannot be derived by the network", the UE shall:

- 1) set the GPRS update states to GU2 NOT UPDATED.
- 2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.
- 3) initiate the PS attach procedure automatically.

### Reference

TS 24.008 clauses 4.7.13.4

### 12.9.5.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "MS identity cannot be derived by the network".

### 12.9.5.4 Method of test

#### Initial condition

#### System Simulator:

One cell operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

#### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

- a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

- b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #9 (MS identity cannot be derived by the network).

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following message are sent and shall be received on cell A.
2	SS			The UE is set in UE operation mode C (see ICS).
3	UE			The SS is set in network operation mode II and activates cell A.
3a	SS			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
6			Void	
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "MS identity cannot be derived by the network"
10	UE			The UE automatically initiates the PS attach procedure.
10a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
11a	<-		AUTHENTICATION AND CIPHERING REQUEST	
11b	->		AUTHENTICATION AND CIPHERING RESPONSE	
11c	SS			The SS starts ciphering and integrity protection.
12	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature
13	->		ATTACH COMPLETE	
14	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
15	->		SERVICE REQUEST	Service type = "signalling"
16	<-		AUTHENTICATION AND CIPHERING REQUEST	
17	->		AUTHENTICATION AND CIPHERING RESPONSE	
18	SS			The SS initiate a security mode control procedure.
19	SS			After the security mode control procedure is completed, the SS releases RRC connection.
20	UE			The UE is switched off or power is removed (see ICS).
21	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

22	SS	The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
----	----	---

### Specific message contents

None.

#### 12.9.5.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "MS identity cannot be derived by the network" UE shall:

- initiate PS attach procedure automatically.

### 12.9.6 Service Request / rejected / PLMN not allowed

#### 12.9.6.1 Definition

#### 12.9.6.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "PLMN not allowed", the UE shall:

- 1) delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number.
- 2) set the GPRS update status to GU3 ROAMING NOT ALLOWED.
- 3) store the PLMN identity in the appropriate forbidden list.

#### Reference

TS 24.008 clauses 4.7.13.4

#### 12.9.6.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "PLMN not allowed".

#### 12.9.6.4 Method of test

#### Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (Not HPLMN) cell B in MCC2/MNC1/LAC1/RAC1.

All two cells are operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.](#)

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

## Test procedure

- a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.
- b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #11 (PLMN not allowed).
- c) The SS checks that the UE does not initiate an upper-layer signalling until the UE is switched off.
- d) The SS checks that the UE does not answer a Page from the SS until the power of the UE is switched off.



Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			<p>The following message are sent and shall be received on cell A.</p> <p>The UE is set in UE operation mode C (see ICS).</p> <p>The SS is set in network operation mode II.</p> <p>Set the cell type of cell A to the "Serving cell".</p> <p>Set the cell type of cell B to the "Non-Suitable cell".</p> <p>(see note)</p> <p>The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.</p> <p>The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</p> <p>Attach type = 'PS attach'</p> <p>Mobile identity = P-TMSI-1</p> <p>Routing area identity = RAI-1</p> <p>The SS starts ciphering and integrity protection.</p> <p>No new mobile identity assigned.</p> <p>P-TMSI and P-TMSI signature not included.</p> <p>Routing area identity = RAI-1</p> <p>Attach result = 'PS only attached'</p> <p>The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.</p> <p>Service type = "signalling"</p> <p>Reject cause = "PLMN not allowed"</p> <p>The UE stores the PLMN identity in the "forbidden PLMN list".</p> <p>The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.</p> <p>The SS verifies that the UE does not attempt to access the network.</p> <p>(SS wait 30second)</p> <p>Paging order is for PS service</p> <p>No response from the UE to the request. This is checked for 10 seconds.</p> <p>The following messages shall be sent and shall be received on cell B.</p> <p>Set the cell type of cell A to the "Non-Suitable cell".</p> <p>Set the cell type of cell B to the "Serving cell".</p> <p>(see note)</p> <p>Cell B is preferred by the UE.</p> <p>The UE initiates an attach automatically, by MMI or by AT command.</p> <p>The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</p> <p>Attach type = 'PS attach'</p> <p>Mobile identity = IMSI</p> <p>The SS starts ciphering and integrity protection.</p>
2	SS			
3	UE			
3a	SS			
4	->		ATTACH REQUEST	
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			
5	<-		ATTACH ACCEPT	
6			Void	
7	UE			
8	->		SERVICE REQUEST	
9	<-		SERVICE REJECT	
10	UE			
11	UE			
12	SS			
13	<-		PAGING TYPE1	
14	UE			
15	SS			
16	UE			
17	UE			
17a	SS			
18	->		ATTACH REQUEST	
18a	<-		AUTHENTICATION AND CIPHERING REQUEST	
18b	->		AUTHENTICATION AND CIPHERING RESPONSE	
18c	SS			

19	<-	ATTACH ACCEPT	Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Attach result = 'PS only attached'
20	->	ATTACH COMPLETE	The UE is switched off or power is removed (see ICS).
21	UE		
22	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
23	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.9.6.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the UE receives the SERVICE REJECT message with cause "PLMN not allowed", UE shall:

- not perform a PS attach procedure in the same PLMN.

At step13, when the UE receives the paging message for PS domain UE shall:

- not respond to the paging message for PS domain.

At step18, UE shall:

- perform PS attach procedure.

### 12.9.7a Service Request / rejected / No PDP context activated

#### 12.9.7a.1 Definition

#### 12.9.7a.2 Conformance requirement

If the network rejects a service request procedure with the cause "No PDP context activated", the UE shall:

- deactivate all active PDP contexts.

After the UE deactivates all active PDP contexts, UE shall:

- perform PDP context(s) activation.

#### Reference

TS 24.008 clauses 4.7.13.4

#### 12.9.7a.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "No PDP context activated".

## 12.9.7a.4 Method of test

## Initial condition

## System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

## User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

## Test procedure

- a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.
- b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #40 (No PDP context activated).
- c) After the UE receives the SERVICE REJECT message, the UE shall send the ACTIVATE PDP CONTEXT REQUEST message.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1				The following message are sent and shall be received on cell A.
2				The UE is set in UE operation mode C (see ICS).
3				The SS is set in network operation mode II and activates cell A.
4	->		ATTACH REQUEST	
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	
6	->		ATTACH COMPLETE	
7		UE		The UE initiates a PS call, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		AUTHENTICATION AND CIPHERING REQUEST	
10	->		AUTHENTICATION AND CIPHERING RESPONSE	
11		SS		The SS initiates a security mode control procedure.
12		UE		After a PS call is established, the UE suspends transmission of the user data.
13		SS		The SS initiates a Radio Bearer release procedure.
14		UE		The UE resumes the transmission of the user data.
15	->		SERVICE REQUEST	Service type = "data"
16	<-		SERVICE REJECT	Reject cause = "No PDP context activated"
17		UE		The UE shall deactivate locally all active PDP contexts.
18		UE		The UE initiates a PS call, by MMI or by AT command.
19	->		SERVICE REQUEST	Service type = "signalling"
20	<-		AUTHENTICATION AND CIPHERING REQUEST	
21	->		AUTHENTICATION AND CIPHERING RESPONSE	
21		SS		SS initiates a security procedure by sending SECURITY MODE COMMAND message.
22		UE		The UE is switched off or power is removed (see ICS).
23		UE		The UE initiates Detach request, by MMI or by AT command.
24	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
25		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

## Specific message contents

None.

### 12.9.7a.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure.

When the UE receives a SERVICE REJECT message with the cause "No PDP context activated", UE shall:

- deactivate all active PDP context.

At step15, UE shall:

- initiates a Service request procedure by sending a SERVICE REJECT message with Service type = "data".

### 12.9.7b Service Request / rejected / No Suitable Cells In Location Area

#### 12.9.7b.1 Definition

#### 12.9.7b.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "No Suitable Cells In Location Area", the UE shall:

- 1) set the GPRS update status to GU3 ROAMING NOT ALLOWED and shall change to state GMM-REGISTERED.LIMITED-SERVICE.
- 2) store the LAI in the list of 'forbidden location areas for roaming'.

If no RRC connection exists, the UE shall perform the following additional actions immediately. If the UE is operating in operation mode A and an RRC connection exists, the UE shall perform these actions when the RRC connection is subsequently released:

- 1) if the UE is IMSI attached, the UE shall set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.
- 2) search for a suitable cell in a different location area on the same PLMN.

#### Reference

TS 24.008 clauses 4.7.13.4

#### 12.9.7b.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "No Suitable Cells In Location Area".

#### 12.9.7b.4 Method of test

#### Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

All three cells are operating in network operation mode II.

User Equipment:

The UE has valid IMSI.

#### Related ICS/IXIT statements

Support of PS service Yes/No  
UE operation mode A Yes/No  
UE operation mode C Yes/No  
Switch off on button Yes/No  
Automatic PS attach procedure at switch on or power on Yes/No

#### Test procedure

The SS rejects a Service request with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall perform routing area updating procedure when the UE enters a suitable cell in a different location area on the same PLMN.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, goto step 15.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
2a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = "PS attach" Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts ciphering and integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	SS			The SS initiates the RRC connection release.
7	UE			The UE initiates a PS call, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = 'signalling'
9	<-		SERVICE REJECT	Reject cause = 'No Suitable Cells In Location Area'
9a	SS			The SS releases the RRC connection The following message are sent and shall be received on cell B.
9b	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Mobile identity = P-TMSI-1 Old routing area identity = RAI-1
10a	<-		AUTHENTICATION AND CIPHERING REQUEST	
10b	->		AUTHENTICATION AND CIPHERING RESPONSE	
10c	SS			The SS starts ciphering and integrity protection.
11	<-		ROUTING AREA UPDATE ACCEPT	Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-3 Update result = 'RA updated'
12	->		ROUTING AREA UPDATE COMPLETE	
13	UE			The UE is switched off or power is removed (see ICS).
14	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

14a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
15	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 14.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.9.7b.5 Test requirements

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step10, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the routing area updating procedure.

### 12.9.7c Service Request / rejected / Roaming not allowed in this location area

#### 12.9.7c.1 Definition

#### 12.9.7c.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "Roaming not allowed in this location area", the UE shall:

- 1) set the PS update status to GU3 ROAMING NOT ALLOWED
- 2) store the LAI in the list of "forbidden location areas for roaming".
- 3) perform a PLMN selection.

#### Reference

TS 24.008 clauses 4.7.13.4

#### 12.9.7c.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "Roaming area not allowed in this location area".

#### 12.9.7c.4 Method of test

#### Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

All three cells are operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.



## User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The SS rejects a Service request with the cause value 'Roaming not allowed in this location area'. The SS checks that the UE shall not perform PS attach procedure when the UE enters a different location area.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 19.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts ciphering and integrity protection.
5		<-	ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'PS only attached' Routing area identity = RAI-1
6		SS		The SS initiates the RRC connection release.
7	UE			The UE initiates a PS call, by MMI or by AT command.
8		->	SERVICE REQUEST	Service type = "signalling"
9		<-	SERVICE REJECT	Reject cause = "roaming not allowed in this location area"
9a		SS		The SS releases the RRC connection.
10	UE			The UE performs PLMN selection.
11		SS		Set the cell type of cell A to the " Non-Suitable cell". Set the cell type of cell B to the " Serving cell". (see note)
12		SS		The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds).
13		SS		Set the cell type of cell B to the " Non-Suitable cell". Set the cell type of cell C to the " Serving cell". (see note)
13a		SS		The following messages are sent and shall be received on cell C. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
14		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Mobile identity = P-TMSI-1 Old routing area identity = RAI-1
14a		<-	AUTHENTICATION AND CIPHERING REQUEST	
14b		->	AUTHENTICATION AND CIPHERING RESPONSE	
14c		SS		The SS starts integrity protection.

15	<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA update' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI-2
16	->	ROUTING AREA UPDATE COMPLETE	
17	UE		The UE is switched off or power is removed (see ICS).
18	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
18a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
19	UE		The UE is set to attach to both the PS and non- PS services (see ICS) and the test is repeated from step 3 to step 18.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

### Specific message contents

None.

#### 12.9.7c.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step12, when the UE enters a same location area, UE shall:

- not initiate the combined PS attach procedure.

At step14, when the UE enters a different location area, UE shall:

- initiate the routing area updating procedure with information elements specified in the above Expected Sequence.

## 12.9.8 Service Request / Abnormal cases / Access barred due to access class control

### 12.9.8.1 Definition

### 12.9.8.2 Conformance requirement

If the UE access class X is barred, the UE shall:

- 1) not start Service Request procedure.
- 2) stay in the current serving cell.
- 3) applie normal cell reselection process.

If the UE access class X is granted or serving cell is changed, the UE shall:

- 1) start Service Request procedure.

### Reference

TS 24.008 clauses 4.7.13.5.

## 12.9.8.3 Test purpose

To test the behavior of the UE in case of access class control (access is granted).

## 12.9.8.4 Method of test

## Initial condition

A random access class X (0-15) is selected. The USIM is programmed with this access class X.

Initially, an access class X is barred.

## System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

Access class x barred.

## User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

## Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

## Test procedure

The SS initiates access class X barred. A service request procedure is not performed.

The SS initiates that access class X is not barred. A service request procedure is performed.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The USIM is set up Access class x. The access class x is barred in cell A. The UE is powered up or switched on and attempt to initiate an ATTACH.
2	UE			No SERVICE REQUEST sent to SS, as access class X is barred. (SS waits 30 seconds)
3	SS			The access class x is not barred anymore.
4	UE			The UE automatically initiates an attach.
4a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
5	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-2 Routing area identity = RAI-1
5a	<-		AUTHENTICATION AND CIPHERING REQUEST	
5b	->		AUTHENTICATION AND CIPHERING RESPONSE	
5c	SS			The SS starts ciphering and integrity protection.

6	<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
7	->	ATTACH COMPLETE	The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	UE		
9	->	SERVICE REQUEST	Service Type = "signalling".
10	<-	AUTHENTICATION AND CIPHERING REQUEST	
11	->	AUTHENTICATION AND CIPHERING RESPONSE	
11a	SS		The SS initiates a security mode control procedure.
12	UE		The UE is switched off or power is removed (see ICS).
13	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
14	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

#### Specific message contents

None.

#### 12.9.8.5 Test requirements

At step2, when the UE access class x is barred, UE shall:

- not perform Service Request procedure.

At step5, when the UE access class x is barred, UE shall:

- initiate the PS attach procedure.

At step9, UE shall:

- perform Service Request procedure.

### 12.9.9 Service Request / Abnormal cases / Routing area update procedure is triggered

#### 12.9.9.1 Definition

#### 12.9.9.2 Conformance requirement

If a cell change into a new routing area occurs and the necessity of routing area update procedure is determined before the security mode control procedure is completed, the UE shall:

- abort Service request procedure.
- start routing area update procedure immediately.

#### Reference

TS 24.008 clause 4.7.13.5

### 12.9.9.3 Test purpose

To test the behavior of the UE in case of collision between Routing area update procedure and Service request procedure.

### 12.9.9.4 Method of test

#### Initial condition

#### System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Both cells are operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells](#)

#### User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

#### Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

#### Test procedure

- a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling in cell A.
- b) The SS changes the conditions of cell A so that it is no longer a suitable "Serving cell".
- c) The UE aborts Service request procedure and performs Routing area updating procedure.
- d) The UE re-sends the SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling, this time in cell B

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following messages are sent and shall be received on cell A.
2	SS			The UE is set in UE operation mode C (see ICS).
				The SS is set in network operation mode II.
				Set the cell type of cell A to the "Serving cell".
				Set the cell type of cell B to the "Suitable neighbour cell".
				(see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
6			Void	
6a	UE			The UE initiates upper-layer signalling, e.g., Activate PDP Context request, by MMI or by AT command.
7	->		SERVICE REQUEST	Service type = "signalling"
8	SS			The RF level of cell A is lowered until the level corresponds to that of a "Non-suitable cell". Note: the SS does not initiate the security mode control procedure.
9	UE			The UE aborts Service request procedure.
10	->		ROUTING AREA UPDATE REQUEST	The following message are sent and shall be received on cell B. Update type = 'RA updating'
11	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
12	->		ROUTING AREA UPDATE COMPLETE	
13	UE			The UE initiates upper-layer signalling, e.g., Activate PDP Context request, either automatically or by MMI or by AT command.
14	->		SERVICE REQUEST	Service type = "signalling"
15	<-		AUTHENTICATION AND CIPHERING REQUEST	
16	->		AUTHENTICATION AND CIPHERING RESPONSE	
17	SS			The SS initiates a security mode control procedure.
18	SS			After the security mode control procedure is completed, the SS releases RRC connection.
19	UE			The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

21	SS	The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message has been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

### Specific message contents

None.

#### 12.9.9.5 Test requirements

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence .

At step7, UE shall:

- perform the service request procedure.

At steps 9 and 10, after the SS sets the cell type of cell A to "Non-suitable cell" before the security mode control procedure is completed, UE shall;

- abort the Service request procedure
- perform the routing area updating procedure.

At step14, after the UE completes the routing area updating procedure, UE shall;

- restart the Service Request procedure.

### 12.9.10 Service Request / Abnormal cases / Power off

#### 12.9.10.1 Definition

#### 12.9.10.2 Conformance requirement

When the UE in GMM-SERVICE-REQUEST-INITIATED state is switched off, UE shall:

- perform PS detach procedure.

#### Reference

TS 24.008 clauses 4.7.13.5

#### 12.9.10.3 Test purpose

To test the behavior of the UE in case of collision between Service request procedure and "powered off".

#### 12.9.10.4 Method of test

#### Initial condition

System Simulator:

One cell operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

User Equipment:



The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

The UE is switched off after initiating a Service request procedure. A PS detach is automatically performed by the UE before power is switched off.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following message are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS). The SS is set in network operation mode II and activates cell A. The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE. Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1  The SS starts ciphering and integrity protection. No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached' The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command. Service type = "signalling" The UE is powered off and initiates a PS detach (with power off) by MMI or by AT command. Detach type = 'power switched off, PS detach' The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
2		SS		
3	UE			
4		->	ATTACH REQUEST	
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		
5		<-	ATTACH ACCEPT	
6	UE			
7		->	SERVICE REQUEST	
8	UE			
9		->	DETACH REQUEST	
10		SS		

Specific message contents

None.

12.9.10.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, UE shall:

- perform the service request procedure

At step9, when the UE is switched off during the Service Request procedure, UE shall;

- abort the Service request procedure.
- perform the PS detach procedure.

## 12.9.11 Service Request / Abnormal cases / Service request procedure collision

12.9.11.1 Definition

12.9.11.2 Conformance requirement

Abnormal cases in the MS

The following abnormal cases can be identified:

- Procedure collision

If the MS receives a DETACH REQUEST message from the network in state GMM-SERVICE-REQUEST-INITIATED, the GPRS detach procedure shall be progressed and the Service request procedure shall be aborted. If the cause IE, in the DETACH REQUEST message, indicated a "reattach request", the GPRS attach procedure shall be performed.

Reference

TS 24.008 clauses 4.7.13.5

12.9.11.3 Test purpose

To test the behaviour of the UE in case of collision between Service request procedure and PS detach procedure.

12.9.11.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

- a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

- b) The SS does not respond to the SERVICE REQUEST for data. Instead it sends a DETACH REQUEST message to the UE, with the Detach type IE set to value "re-attach required".
- c) After the UE receives the DETACH REQUEST message, the repeats the attach procedure.
- d) The UE is switched off or power is removed. If the UE is switched off it sends a DETACH REQUEST.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following message are sent and shall be received on cell A.
2	SS			The UE is set in UE operation mode C (see ICS).
3	UE			The SS is set in network operation mode II and activates cell A.
4	->		ATTACH REQUEST	The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	Attach type = 'PS attach'
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	Mobile identity = P-TMSI-1
4c	SS			Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	The SS starts ciphering and integrity protection.
6			Void	No new mobile identity assigned.
7a	UE			P-TMSI and P-TMSI signature not included.
7b	->		SERVICE REQUEST	Routing area identity = RAI-1
7c	SS			Attach result = 'PS only attached'
7d	SS			
7e	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	SS			The SS starts ciphering and integrity protection.
10	<-		DETACH REQUEST	The SS initiates a Radio Bearer release procedure.
10a	->		DETACH ACCEPT	The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
11	->		ATTACH REQUEST	Service type = "data"
11a	<-		AUTHENTICATION AND CIPHERING REQUEST	The SS does not respond to SERVICE REQUEST message.
11b	->		AUTHENTICATION AND CIPHERING RESPONSE	Detach type = "re-attach required"
11c	SS			
12	<-		ATTACH ACCEPT	Attach type = 'PS attach'
13	->		ATTACH COMPLETE	Mobile identity = P-TMSI-1
14	UE			Routing area identity = RAI-1
15	->		DETACH REQUEST	Attach result = 'PS only attached'
16	SS			The SS starts ciphering and integrity protection.
				Mobile identity = P-TMSI-2
				P-TMSI-2 signature
				Routing area identity = RAI-1
				Attach result = 'PS only attached'
				The UE is switched off or power is removed (see ICS).
				Message not sent if power is removed.
				Detach type = 'power switched off, PS detach'
				The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

#### 12.9.11.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives a DETACH REQUEST message from the network before the Service request procedure completes, UE shall;

- repeat the attach procedure.
- retry the Service request procedure

At step 19 if the UE is switched off, UE shall:

- perform the PS detach procedure.

### 12.9.12 Service Request / RAB re-establishment / UE initiated / Single PDP context

#### 12.9.12.1 Definition

#### 12.9.12.2 Conformance requirement

The following procedures shall be performed in the MS when radio coverage is lost:

- For a PDP context using background or interactive traffic class, the PDP context is preserved even if RRC re-establishment procedures have failed.
- For a PDP context using streaming or conversational traffic class, the PDP context is preserved, but the maximum bit rate is downgraded to 0 kbit/s (for both uplink and downlink) when the RRC re-establishment procedure has failed. After coverage is regained and if the MS did not deactivate the PDP Context locally the MS should start MS-initiated PDP Context Modification procedure or the PDP Context Deactivation procedure. The MS shall use the PDP Context Modification procedure to re-activate the PDP context and re-establish the RAB.

The following procedures shall be performed in the MS when the RRC layer indicate to higher layer that a RAB has been released and the RAB release was not initiated due to a PDP Context Deactivation Procedure:

- For a PDP context using background or interactive traffic class, the PDP context is be preserved with no modifications.
- For a PDP context using streaming or conversational traffic class, the PDP context is preserved, but the maximum bit rate is downgraded to 0 kbit/s (for both uplink and downlink).

At this point or at a later stage, the MS may start a PDP Context Deactivation procedure or PDP Context Modification procedure. The MS shall use the PDP Context Modification procedure to re-activate the PDP context and re-establish the RAB.

The procedure for re-establishment of RABs allows the SGSN to re-establish RABs for active PDP contexts that don't have an associated RAB.

The MS initiates the re-establishment of RABs by using the Service Request (Service Type = Data) message.

The criteria to invoke the Service request procedure are when;

- b) the MS, either in PMM-IDLE or PMM-CONNECTED mode, has pending user data to be sent and no radio access bearer is established for the corresponding PDP context. The procedure is initiated by an indication from the lower layers (see 3GPP TS 24.007). In this case, the service type shall be set to "data".

After completion of a Service request procedure, the pending service is resumed and uses then the connection established by the procedure. If the service type is indicating "data", then the radio access bearers for all activated PDP contexts are re-established by the network, except for those activated PDP contexts having maximum bit rate value set to 0 kbit/s for both uplink and downlink. The re-establishment of radio access bearers for those PDP contexts is specified in subclause 6.1.3.3 of 3GPP TS 24.008.

## Reference

TS 23.060 clause 9.2.3.4-5, 9.2.5.2

TS 24.008 clause 4.7.13

### 12.9.12.3 Test purpose

To verify that the UE initiates a Service request procedure due to uplink data transmission with one preserved PDP context with traffic class "Background class" after normal RRC connection release as well as when radio coverage is lost.

To verify that the radio access bearer can be re-established for the preserved PDP context, initiated by the UE.

### 12.9.12.4 Method of test

#### Initial condition

System Simulator:

One cell, default parameters.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

User Equipment:

The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

#### Related ICS/IXIT statements

Support of PS service	Yes/No
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#### Test procedure

- a) A PDP context with traffic class "Background class" is activated including the radio access bearer.
- b) The SS releases the RRC connection, but keeps the PDP context.
- c) Due to transmission of uplink data, the UE initiates an RRC connection establishment and sends a SERVICE REQUEST.
- d) The SS responds with a SERVICE ACCEPT message and establishes the RAB for the active PDP context using a Radio bearer establishment procedure and the same QoS as previously, without the need for PDP context modification.
- e) The SS configured the cell as a non-suitable "Off" cell for 4 minutes, making the UE to release the RAB and enter idle mode due to that radio coverage is lost.
- f) The SS configures the cell as a serving cell.
- g) Due to transmission of uplink data, the UE initiates an RRC connection establishment and sends a SERVICE REQUEST.
- h) The SS responds with a SERVICE ACCEPT message and establishes the RAB for the active PDP context using a Radio bearer establishment procedure and the same QoS as previously, without the need for PDP context modification.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		UE		Initiate a PDP context activation
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context with traffic class "Background class"
3		SS		The SS starts ciphering and integrity protection and establishes the radio access bearer.
4	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
5		SS		The SS releases the RRC connection
6		UE		The UE initiates transmission of uplink data, by MMI or by AT command.
7		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originating Background Call".
8	→		SERVICE REQUEST	Service type = "data"
9		SS		The SS starts ciphering and integrity protection.
10		SS		The SS establishes the radio access bearer for the active PDP context, using the same QoS that was used at activation.
11		SS		The SS configures the cell as a non-suitable "Off" cell and waits for 4 minutes, making the UE to release the RAB and enter idle mode.
12		SS		The SS configures the cell as a serving cell.
13		UE		The UE initiates transmission of uplink data, by MMI or by AT command.
14		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originating Background Call".
15	→		SERVICE REQUEST	Service type = "data"
16		SS		The SS starts ciphering and integrity protection.
17		SS		The SS establishes the radio access bearer for the active PDP context, using the same QoS that was used at activation.

## Specific message contents

None.

## 12.9.12.5 Test requirements

After steps 7 and 14, UE shall:

- transmit a SERVICE REQUEST message with service type "data"

## 12.9.13 Service Request / RAB re-establishment / UE initiated / multiple PDP contexts

### 12.9.13.1 Definition

### 12.9.13.2 Conformance requirement

The following procedures shall be performed in the MS when the RRC layer indicate to higher layer that a RAB has been released and the RAB release was not initiated due to a PDP Context Deactivation Procedure:

- For a PDP context using background or interactive traffic class, the PDP context is be preserved with no modifications.
- For a PDP context using streaming or conversational traffic class, the PDP context is preserved, but the maximum bit rate is downgraded to 0 kbit/s (for both uplink and downlink).

At this point or at a later stage, the MS may start a PDP Context Deactivation procedure or PDP Context Modification procedure. The MS shall use the PDP Context Modification procedure to re-activate the PDP context and re-establish the RAB.

The procedure for re-establishment of RABs allows the SGSN to re-establish RABs for active PDP contexts that don't have an associated RAB.

The MS initiates the re-establishment of RABs by using the Service Request (Service Type = Data) message.

The criteria to invoke the Service request procedure are when;

- b) the MS, either in PMM-IDLE or PMM-CONNECTED mode, has pending user data to be sent and no radio access bearer is established for the corresponding PDP context. The procedure is initiated by an indication from the lower layers (see 3GPP TS 24.007). In this case, the service type shall be set to "data".

After completion of a Service request procedure, the pending service is resumed and uses then the connection established by the procedure. If the service type is indicating "data", then the radio access bearers for all activated PDP contexts are re-established by the network, except for those activated PDP contexts having maximum bit rate value set to 0 kbit/s for both uplink and downlink. The re-establishment of radio access bearers for those PDP contexts is specified in subclause 6.1.3.3 of 3GPP TS 24.008.

### Reference

TS 23.060 clause 9.2.3.4-5, 9.2.5.2

TS 24.008 clause 4.7.13

### 12.9.13.3 Test purpose

To verify that the UE initiates a Service request procedure due to uplink data transmission with two PDP contexts with different traffic classes are activated, when one is of traffic class "background class" and the other is of traffic class "interactive class", after normal RRC connection release.

To verify that the radio access bearers can be re-established with a single radio bearer establishment procedure for the preserved PDP contexts, when initiated by the UE.

### 12.9.13.4 Method of test

#### Initial condition

#### System Simulator:

One cell, default parameters.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

#### User Equipment:



The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

#### Related ICS/IXIT statements

Support of PS service Yes/No  
 Secondary PDP context activation procedure Yes/no

#### Test procedure

- a) Two PDP contexts with different Traffic Classes are activated including the radio access bearers.
- b) The SS releases the RRC connection, but keeps the two PDP contexts.
- c) Due to transmission of uplink data, the UE initiates an RRC connection establishment and sends a SERVICE REQUEST.
- d) The SS responds with a SERVICE ACCEPT message and establishes the RABs for the two active PDP contexts using a single Radio bearer establishment procedure and the same QoS as previously, without the need for PDP context modification.

#### Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		UE		Initiate a PDP context activation
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context with traffic class "Background class"
3		SS		The SS starts ciphering and integrity protection and establishes the radio access bearer.
4	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
5		UE		Initiate a secondary PDP context activation
6	→		ACTIVATE SECONDARY PDP CONTEXT REQUEST	Request a Secondary PDP context activation with traffic class "Interactive class"
7		SS		The SS establishes the radio access bearer.
8	←		ACTIVATE SECONDARY PDP CONTEXT ACCEPT	Accept the Secondary PDP context activation
9		SS		The SS releases the RRC connection.
10		UE		The UE initiates transmission of uplink data, by MMI or by AT command.
11		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originating Interactive Call", which is the most demanding traffic class among the active PDP contexts.
12	→		SERVICE REQUEST	Service type = "data"
13		SS		The SS starts ciphering and integrity protection.
14		SS		The SS establishes the radio access bearers simultaneously for the two active PDP contexts, using the same QoS that was used at activation.

#### Specific message contents

None.

#### 12.9.13.5 Test requirements

After step 11, UE shall:

- transmit a SERVICE REQUEST message with service type "data".

## 12.9.14 Service Request / RAB re-establishment / Network initiated / single PDP context

### 12.9.14.1 Definition

### 12.9.14.2 Conformance requirement

The following procedures shall be performed in the MS when the RRC layer indicate to higher layer that a RAB has been released and the RAB release was not initiated due to a PDP Context Deactivation Procedure:

- For a PDP context using background or interactive traffic class, the PDP context is be preserved with no modifications.
- For a PDP context using streaming or conversational traffic class, the PDP context is preserved, but the maximum bit rate is downgraded to 0 kbit/s (for both uplink and downlink).

At this point or at a later stage, the MS may start a PDP Context Deactivation procedure or PDP Context Modification procedure. The MS shall use the PDP Context Modification procedure to re-activate the PDP context and re-establish the RAB.

The procedure for re-establishment of RABs allows the SGSN to re-establish RABs for active PDP contexts that don't have an associated RAB.

When RABs for an MS that has no RRC connection needs to be re-established, the CN must first page the MS.

The criteria to invoke the Service request procedure are when;

- c) the MS receives a paging request for PS domain from the network in PMM-IDLE mode. In this case, the service type shall be set to "paging response".

After completion of a Service request procedure, the pending service is resumed and uses then the connection established by the procedure. If the service type is indicating "data", then the radio access bearers for all activated PDP contexts are re-established by the network, except for those activated PDP contexts having maximum bit rate value set to 0 kbit/s for both uplink and downlink. The re-establishment of radio access bearers for those PDP contexts is specified in subclause 6.1.3.3 of 3GPP TS 24.008.

### Reference

TS 23.060 clause 9.2.3.4-5, 9.2.5.2

TS 24.008 clause 4.7.13

### 12.9.14.3 Test purpose

To verify that the radio access bearers can be re-established for the preserved PDP context with traffic class "Background class", when initiated from the network, after normal RRC connection release.

### 12.9.14.4 Method of test

System Simulator:

One cell, default parameters.

[The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".](#)

User Equipment:

The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

## Related ICS/IXIT statements

Support of PS service Yes/No

## Test procedure

- a) A PDP context with traffic class "Background class" is activated including the radio access bearer.
- b) The SS releases the RRC connection, but keeps the PDP context.
- c) The SS initiates paging of the UE.
- d) As response to the paging, the UE initiates an RRC connection establishment and sends a SERVICE REQUEST.
- e) The SS responds with a SERVICE ACCEPT message and establishes the RAB for the active PDP context using the same QoS as previously, without the need for PDP context modification.

## Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a PDP context activation
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context with traffic class "Background class"
3		SS		The SS starts ciphering and integrity protection and establishes the radio access bearer.
4	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
5		SS		The SS releases the RRC connection.
6		SS		The SS waits for 5 s to ensure the UE is in service.
7	←		PAGING TYPE 1	The SS initiates paging of the UE using the paging cause "Terminating Background Call"
8		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to the same value as the paging cause.
9	→		SERVICE REQUEST	Service type = "Paging response"
10		SS		The SS starts ciphering and integrity protection.
11		SS		The SS establishes the radio access bearer for the active PDP context, using the same QoS that was used at activation.

## Specific message contents

None.

## 12.9.14.5 Test requirements

After step 8, UE shall:

- transmit a SERVICE REQUEST with service type "Paging response"