RP-040194

TSG RAN Meeting #24 Seoul, Korea, 2 - 4 June 2004

TitleCRs Rel-5 and Corresponding Rel-6) to TS 25.133SourceTSG RAN WG4Agenda Item7.5.5

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-040347	25.133	660	1	F	Rel-5	5.10.0	Clarification of HS-DPCCH in Transport format combination selection requirements	HSDPA-RF
R4-040348	25.133	661	1	A	Rel-6	6.5.0	Clarification of HS-DPCCH in Transport format combination selection requirements	HSDPA-RF
R4-040314	25.133	662	1	F	Rel-5	5.10.0	Correction to UTRA Carrier RSSI measurement tables in test cases	TEI5
R4-040315	25.133	663	1	F	Rel-6	6.5.0	Correction to UTRA Carrier RSSI measurement tables in test cases	TEI6
R4-040316	25.133	664	1	F	Rel-5	5.10.0	Corrections to Io, Ioc and RSCP levels for testing different frequency bands	TEI5
R4-040317	25.133	665	1	F	Rel-6	6.5.0	Corrections to Io, Ioc and RSCP levels for testing different frequency bands	TEI6
R4-040318	25.133	666	1	F	Rel-5	5.10.0	Removal of square brackets and other corrections to support T1	TEI5
R4-040319	25.133	667	1	Α	Rel-6	6.5.0	Removal of square brackets and other corrections to support T1	TEI5

3GPP TSG RAN WG4 (Radio) Meeting #31

Beijing, China 10 - 14 May 2004

CHANGE REQUEST														
ж		<mark>25</mark> .	<mark>133</mark>	CR	660	ж ге	ev	1	Ħ	Curre	nt vers	sion:	<mark>5.10</mark>	.0 ^ж
For <u>HELP</u> or	n us	ing t	his fo	rm, see	e bottom of t	his page	e or la	ook	at th	е рор-и	up text	over	<i>the</i>	symbols.
Proposed change affects: UICC apps# ME X Radio Access Network X Core Network														
Title:	ж	Cla	rificati	on of H	IS-DPCCH	in Trans	port f	form	nat co	ombina	ition se	electio	n requi	rements
Source:	ж	RA	<mark>N WG</mark>	4										
Work item code:	ж	HSI	<mark>DPA-</mark> F	RF						D	<i>ate:</i> ೫	24/	05/200 [,]	4
Category:	ж	F								Relea	ase: Ж	Rel	-5	
		Use <u>c</u> I Detai be for	<u>one</u> of F (cor A (cor B (ade C (fun D (edi led ex und in	the follo rection) respon dition of ctional torial m planatic 3GPP	owing categor ds to a correct f feature), modification (nodification) ons of the abo <u>TR 21.900</u> .	ries: ction in ar of feature ove categ	n earli e) ories	ier re	elease	Use 2 F F F F F F	<u>one</u> of 296 297 298 299 299 201-4 201-5 201-6	the fo (GSM (Rele (Rele (Rele (Rele (Rele (Rele (Rele	llowing I A Phase ase 199 ase 199 ase 199 ase 199 ase 4) ase 5) ase 6)	releases: 2) 06) 07) 18) 19)
Reason for chan	ge:	ж	It is	not cle	ar whether H	IS-DPC	CH s	hou	ld be	e taken	into a	ccoun	t in the	TFC

, , , , , , , , , , , , , , , , , , ,	Elimination and Recovery criteria.					
Summary of change: #	 It is clarified that HS-DPCCH channel should be taken into account in the evaluation of the TFC Elimination and Recovery criteria when the UE actually transmits HS-DPCCH. The timing of the measurement period is also clearly defined to the timing of DPCH slot. In this CR UE maximum transmit power reduction due to increased PAR is also taken into account in the requirements. 					
	Isolated Impact Analyses: Since the current specification does not define how the TFC selection criteria should be evaluated in case of HS-DPCCH, this CR may require different implementation than what a UE currently has. However, this should not be very likely, since the method in this CR has been a RAN4 working assumption for some time now.					
Consequences if # not approved:	Terminals will not take HS-DPCCH into account in a similar manner when evaluating Elimination and Recovery criteria. This makes the optimisation of the network more difficult due to differently behaving terminals.					
Clauses affected: #	6.4.2					
	ΥΝ					
Other specs ж affected:	XOther core specifications#XTest specificationsTS34.121					

Other comments: # Equivalent CRs in other Releases: CR661r1 ca	t. A to 25.133 v6.5.0

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

6.4 Transport format combination selection in UE

6.4.1 Introduction

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format set, according to the functionality specified in section 11.4 in TS25.321. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321.

6.4.2 Requirements

The UE shall continuously evaluate based on the *Elimination, Recovery* and *Blocking* criteria defined below, how TFCs on an uplink DPDCH can be used for the purpose of TFC selection. The evaluation shall be performed for every TFC in the TFCS using the estimated UE transmit power. The UE transmit power estimation for a given TFC, when HS-DPCCH is not transmitted during the measurement period, shall be <u>calculated</u> using the UE transmitted power measured over the measurement period, defined in 9.1.6.1 as one slot, and the DPDCH and DPCCH gain factors of the corresponding TFC and reference transmit power. The reference transmit power is the transmit power of DPCCH and DPDCH of a given TFC during the measurement period for which UE transmit power estimation is made. If HS-DPCCH is transmitted either partially or totally within the given measurement period the UE transmit power estimation for a given TFC shall be calculated using DPDCH and DPCCH gain factors, the maximum value of the HS-DPCCH gain factor that is used during the measurement period, and the reference transmit power. The timing of the measurement period, and the reference transmit power. The timing of the measurement period, and the reference transmit power. The timing of the measurement period, and the reference transmit power.

The UE shall consider the *Elimination* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC is greater than the Maximum UE transmitter power for at least X out of the last Y successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Elimination* criterion was detected.

The UE shall consider the *Recovery* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC has not been greater than the Maximum UE transmitter power for the last Z successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Recovery* criterion was detected.

The evaluation of the *Elimination* criterion and the *Recovery* criterion shall be performed at least once per radio frame.

The definitions of the parameters X,Y and Z which shall be used when evaluating the *Elimination* and the *Recovery* criteria when no compressed mode patterns are activated are given in Table 6.0.

Table 6.0: X, Y, Z	Z parameters f	or TFC selection
--------------------	----------------	------------------

X	Y	Z
15	30	30

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess-Power state for a duration of:

$$(T_{notify} + T_{modify} + T_{L1_proc})$$

where:

 T_{notify} equals [15] ms, and

 T_{modify} equals MAX($T_{adapt max}, T_{TTI}$), and

 $T_{L1 proc}$ equals 15 ms, and

 T_{adapt_max} equals MAX(T_{adapt_1}, T_{adapt_2}, ..., T_{adapt_N}), and

N equals the number of logical channels that need to change rate, and

 T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms. For services where either UMTS_AMR2 or UMTS_AMR_WB is used, Tadapt shall be considered to be equal to the time required to switch from the current codec mode to a new supported codec mode. In that case Tadapt equals 20 ms + 40 ms per codec mode switch. E.g. Tadapt equals 60ms if one codec mode switch is necessary and Tadapt equals 140ms if 3 codec mode switches are necessary.

 T_{TTI} equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

Maximum UE transmitter power = MIN(Maximum allowed UL TX Power, UE maximum transmit power)

where

Maximum allowed UL TX Power is set by UTRAN and defined in [16], and

UE maximum transmit power is defined by the UE power class, and specified in [3]. <u>The UE is allowed to</u> reduce its maximum transmit power for certain gain factors when HS-DPCCH is transmitted as defined in [3]. If the UE is allowed to reduce its maximum transmit power for certain TFCs, the UE shall use the reduced maximum transmit power in the evaluation of the TFC selection criteria for those TFCs.

6.5 Maximum allowed UL TX Power

UTRAN may limit the power the UE is using on the uplink by setting the maximum allowed UL TX power IE defined in TS25.331.

For each measurement period, the UE shall with the use of the UE transmitted power measurement, estimate if it has reached the Maximum allowed UL TX Power or not. With tolerances as defined for the UE transmitted power measurement accuracy (section 9.1.6.1), the UE output power shall not exceed the Maximum allowed UL TX Power, as set by the UTRAN.

For UE output powers that are outside the range covered by the UE transmitted power measurement the UE output power shall not exceed the Maximum allowed UL TX Power with more than the tolerances specified for the Open loop power control in TS 25.101 section 6.4.1.

3GPP TSG RAN WG4 (Radio) Meeting #31

Beijing, China 10 - 14 May 2004

										CR-Form-v7		
æ		25.13	<mark>33</mark> CR	<mark>661</mark>	ж re v	v	1	ж	Current ve	ersion	6.5.0	ж
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the <i>X</i> symbols.												
Proposed change affects: UICC apps# ME X Radio Access Network X Core Network												
Title:	ж	Clarific	cation of	HS-DPCCH in	Transp	ort f	orm	at co	mbination	select	<mark>ion require</mark>	ments
Source:	ж	RAN	VG4									
Work item code:	: X	HSDP	A-RF						Date:	೫ <mark>2</mark> 4	4/05/2004	
Category:	æ	A Use <u>one</u> F (A B C D Detailed be found	of the fo correction correspo addition functional explanat in 3GPF	Ilowing categorie n) nds to a correctio of feature), nl modification of modification) ions of the above • <u>TR 21.900</u> .	es: on in an feature) e catego	earli	er re	elease	Release: Use <u>one</u> 2 () R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	ж R of the (GS (Re (Re (Re (Re (Re (Re	el-6 following rel SM Phase 2) lease 1996) lease 1997) lease 1998) lease 1999) lease 4) lease 5) lease 6)	eases:
Reason for chan	ige:	ະ ິສ It E	is not cl liminatio	ear whether HS n and Recover	S-DPCC y criteri	CH s a.	hou	ld be	taken into	accou	unt in the T	FC

	Elimination and Recovery criteria.						
Summary of change: ₩	 It is clarified that HS-DPCCH channel should be taken into account in the evaluation of the TFC Elimination and Recovery criteria when the UE actually transmits HS-DPCCH. The timing of the measurement period is also clearly defined to the timing of DPCH slot. In this CR UE maximum transmit power reduction due to increased PAR is also taken into account in the requirements. 						
	Isolated Impact Analyses: Since the current specification does not define how the TFC selection criteria should be evaluated in case of HS-DPCCH, this CR may require different implementation than what a UE currently has. However, this should not be very likely, since the method in this CR has been a RAN4 working assumption for some time now.						
Consequences if # not approved:	Terminals will not take HS-DPCCH into account in a similar manner when evaluating Elimination and Recovery criteria. This makes the optimisation of the network more difficult due to differently behaving terminals.						
Clauses affected: ೫	6.4.2						
	YN						
Other specs Ж	X Other core specifications #						
affected:	X Test specifications TS34.121						

	X O&M Specifications
Other comments:	€ Equivalent CRs in other Releases: CR660r1 cat. F to 25.133 v5.10.0

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

6.4 Transport format combination selection in UE

6.4.1 Introduction

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format set, according to the functionality specified in section 11.4 in TS25.321. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321.

6.4.2 Requirements

The UE shall continuously evaluate based on the *Elimination, Recovery* and *Blocking* criteria defined below, how TFCs on an uplink DPDCH can be used for the purpose of TFC selection. The evaluation shall be performed for every TFC in the TFCS using the estimated UE transmit power. The UE transmit power estimation for a given TFC, when HS-DPCCH is not transmitted during the measurement period, shall be <u>calculated</u> using the UE transmitted power measured over the measurement period, defined in 9.1.6.1 as one slot, and the DPDCH and DPCCH gain factors of the corresponding TFC and reference transmit power. The reference transmit power is the transmit power of DPCCH and DPDCH of a given TFC during the measurement period for which UE transmit power estimation is made. If HS-DPCCH is transmitted either partially or totally within the given measurement period the UE transmit power estimation for a given TFC shall be calculated using DPDCH and DPCCH gain factors, the maximum value of the HS-DPCCH gain factor that is used during the measurement period, and the reference transmit power. The timing of the measurement period, and the reference transmit power. The timing of the measurement period, and the reference transmit power. The timing of the measurement period, and the reference transmit power.

The UE shall consider the *Elimination* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC is greater than the Maximum UE transmitter power for at least X out of the last Y successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Elimination* criterion was detected.

The UE shall consider the *Recovery* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC has not been greater than the Maximum UE transmitter power for the last Z successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Recovery* criterion was detected.

The evaluation of the *Elimination* criterion and the *Recovery* criterion shall be performed at least once per radio frame.

The definitions of the parameters X,Y and Z which shall be used when evaluating the *Elimination* and the *Recovery* criteria when no compressed mode patterns are activated are given in Table 6.0.

Table 6.0: X, Y, Z	Z parameters f	or TFC selection
--------------------	----------------	------------------

X	Y	Z
15	30	30

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess-Power state for a duration of:

$$(T_{notify} + T_{modify} + T_{L1_proc})$$

where:

 T_{notify} equals [15] ms, and

 T_{modify} equals MAX($T_{adapt max}, T_{TTI}$), and

 $T_{L1 proc}$ equals 15 ms, and

 T_{adapt_max} equals MAX(T_{adapt_1}, T_{adapt_2}, ..., T_{adapt_N}), and

N equals the number of logical channels that need to change rate, and

 T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms. For services where either UMTS_AMR2 or UMTS_AMR_WB is used, Tadapt shall be considered to be equal to the time required to switch from the current codec mode to a new supported codec mode. In that case Tadapt equals 20 ms + 40 ms per codec mode switch. E.g. Tadapt equals 60ms if one codec mode switch is necessary and Tadapt equals 140ms if 3 codec mode switches are necessary.

 T_{TTI} equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

Maximum UE transmitter power = MIN(Maximum allowed UL TX Power, UE maximum transmit power)

where

Maximum allowed UL TX Power is set by UTRAN and defined in [16], and

UE maximum transmit power is defined by the UE power class, and specified in [3]. <u>The UE is allowed to</u> reduce its maximum transmit power for certain gain factors when HS-DPCCH is transmitted as defined in [3]. If the UE is allowed to reduce its maximum transmit power for certain TFCs, the UE shall use the reduced maximum transmit power in the evaluation of the TFC selection criteria for those TFCs.

6.5 Maximum allowed UL TX Power

UTRAN may limit the power the UE is using on the uplink by setting the maximum allowed UL TX power IE defined in TS25.331.

For each measurement period, the UE shall with the use of the UE transmitted power measurement, estimate if it has reached the Maximum allowed UL TX Power or not. With tolerances as defined for the UE transmitted power measurement accuracy (section 9.1.6.1), the UE output power shall not exceed the Maximum allowed UL TX Power, as set by the UTRAN.

For UE output powers that are outside the range covered by the UE transmitted power measurement the UE output power shall not exceed the Maximum allowed UL TX Power with more than the tolerances specified for the Open loop power control in TS 25.101 section 6.4.1.

3GPP TSG RAN WG4 (Radio) Meeting #31

Beijing, China 10 - 14 May 2004

CHANGE REQUEST									
¥	25.13	33 CR 662	ж ге v	1 [#]	Current vers	^{ion:} <mark>5.10.0</mark> ^ж			
For <u>HELP</u> on u	sing this	form, see bottom	of this page or	look at th	e pop-up text	over the X symbols.			
Proposed change affects: UICC apps% ME X Radio Access Network Core Network									
Title: ж	Correc	tion to UTRA Ca	r <mark>rier RSSI meas</mark>	urement	tables in test o	cases			
Source: अ	RANV	VG4							
Work item code: %	TEI5				<i>Date:</i> ೫	24/05/2004			
Category: ⊮	F Use <u>one</u> F (A (B (C (D (D tailed be found	of the following ca correction) (corresponds to a c (addition of feature) (functional modification (editorial modification explanations of the lin 3GPP <u>TR 21.90</u>	tegories: prrection in an ea , tion of feature) on) above categorie 10.	<i>rlier releas</i> s can	Release: # Use <u>one</u> of 2 e) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	Rel-5 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)			
Reason for change: # Table A.9.5A is entitled "UTRA Carrier RSSI absolute and relative accuracy" by the values for the relative accuracy test requirements are different from the absolute accuracy requirements. Hence, the test requirements for relative accuracy are incorrect. The UTRA Carrier RSSI test case is only defined for Band I. Impact from RF n floor is different for different frequency bands and thereby test case dependent						relative accuracy" but lifferent from the ents for relative I. Impact from RF noise test case dependent.			
 Summary of change: # Change to lo at sensitivity level to band I, -92dBm for band II and -RSSI test case. Table A.9.5A "UTRA Carrier RSS into two tables: A.9.5.A ""UTRA A.9.5.A2 for "UTRA Carrier RSS A note is added that T1 specification RF noise floor. 					evel for frequency bands II and III (-94dBm for and –91dBm for band III) in the UTRA Carrier r RSSI absolute and relative accuracy" is split FRA Carrier RSSI absolute accuracy" I and RSSI relative accuracy". cifications have to consider the impact of the ged. The changes do not affect a UE that fulfils				
Consequences if not approved:	۲ ೫ ۳	1 might use wron leasurements and ecessarily pass th	g test requireme d therefore a UE ne test case.	ents for U that fulfil	TRA Carrier R Is the core rec	SSI relative quirements does not			

Clauses affected:	% A.9.1.3.1, A.9.1.3.2 Y N
Other specs affected:	# X Other core specifications # X Test specifications 34.121 X O&M Specifications 34.121
Other comments:	₭ Equivalent CRs in other Releases: CR663r1 cat. F to 25.133 v6.5.0

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

A.9.1.3 UTRA Carrier RSSI

A.9.1.3.1 Test Purpose and Environment

The purpose of this test is to verify that the UTRA Carrier RSSI measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.3. In this case both cells are in different frequency and compressed mode is applied. The gap length is 7, detailed definition is in TS 25.101 annex A.5, Set 1 of Table A.22. UTRA Carrier RSSI accuracy requirements are tested by using test parameters in Table A.9.5.

Bara	Parameter		Te	st 1	Те	st 2	Те	st 3
Para			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF (number	Channel		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec	/lor	dB	-*	10	-10		-*	10
PCCPCH_	Ec/lor	dB	-*	12	-*	12	-*	12
SCH_Ec/lo	or	dB	-*	12	-*	12	-*	12
PICH_Ec/l	or	dB	-*	15	-*	15	-'	15
DPCH_Ec/	/lor	dB	-15	-	-6	-	-6	-
OCNS_Ec/	/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
	Band I						-94.46	-94.46
loc	Band II	dBm/ 3.84 MHz	-52.22	-52.22	-70.27	-70.27	<u>-92.46</u>	<u>-92.46</u>
	Band III						<u>-91.46</u>	<u>-91.46</u>
Îor/loc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/	lo, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
	Band I						-94_	-94
Io, Note 1	Band II	dBm/3.84 MHz	-50	-50	-69	-69	<u>-92</u>	<u>-92</u>
	Band III						<u>-91</u>	<u>-91</u>
Propagatio	Propagation condition -		AW	'GN	AW	/GN	AW	/GN
NOTE 1:	NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves							

Table A.9.5: UTR/	A Carrier RSSI Inter	frequency test	parameters
-------------------	----------------------	----------------	------------

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

A.9.1.3.2 Test Requirements

The UTRA Carrier RSSI measurement accuracy shall meet the requirements in section 9.1.3. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm for frequency band I, -97dBm for frequency band II and – 96dBm for frequency band III) shall be added into the required accuracy defined in Section 9.1.2 as shown in Table A.9.5A and Table A.9.5A2.

Table A.9.5A: UTRA Carrier RSSI absolute and relative accuracy

		Accura	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dBm			-94 <u>70</u> 87
		- <u>±4 (Note 1)</u> 5.2	- <u>+</u> 7… <u>(Note 1)</u> 8-2	(Band I)
				<u>-9270</u>
LITRA Carrier RSSI				<u>(Band II)</u>
				<u>-9170</u>
				<u>(Band III)</u>
	dBm	± 4	±7	-8770
	dBm	± 6	± 9	-7050

Note 1: Impact from RF noise floor is test case dependent and has not been considered. Noise floor shall be considered in T1 test case

Table A9.5A2: UTRA Carrier RSSI relative accuracy

		Accur	Conditions	
Parameter	<u>Unit</u>	Normal condition	Extreme condition	<u>lo [dBm/3.84</u> <u>MHz]</u>
UTRA Carrier RSSI	<u>dBm</u>	<u>± 7 (Note 1)</u>	<u>± 11(Note 1)</u>	<u>-9470</u> (Band I) <u>-9270</u> (Band II) <u>-9170</u> (Band III)

Note 1: Impact from RF noise floor is test case dependent and has not been considered. Noise floor shall be considered in T1 test case

A.9.1.3A GSM Carrier RSSI

A.9.1.3A.1 Test Purpose and Environment

The purpose of this test is to verify that the GSM Carrier RSSI measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.4.

In the test in Cell_DCH state compressed mode with purpose "GSM Carrier RSSI Measurement" is applied to measure on GSM. The gap length is 7, detailed definition is in TS 25.101 annex A.5. Table A.9.5AA defines the limits of signal strengths and code powers on the UMTS FDD cell, where the requirement is applicable. In the measurement control information it is indicated to the UE that periodic reporting of the GSM RSSI measurement.

The limits of the GSM test parameters are defined in [21].

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI measurement		Compressed mode reference pattern 2 Set 2	As specified in table A.22 TS 25.101 section A.5
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		Not required	
Monitored cell list size		6 GSM neighbours including ARFCN 1	Measurement control information is sent before the compressed mode patterns starts.

Table A.9.5AA: General GSM Carrier RSSI test parameters

Table A.9.5B: Cell specific GSM Carrier RSSI test parameters

Parameter	Unit	Cell 1
UTRA RF Channel number	-	Channel 1
Îor/loc	dB	-1
loc	dBm/ 3.84 MHz	-70
Propagation condition	-	AWGN

A.9.1.3A.2 Test Requirements

The GSM Carrier RSSI measurement accuracy shall meet the requirements in section 9.1.4.

The rate of correct measurements observed during repeated tests shall be at least 90%.

3GPP TSG RAN WG4 (Radio) Meeting #31

Beijing, China 10 - 14 May 2004

ж <mark>2</mark>	25.133 CR 663
For <u>HELP</u> on usin	g this form, see bottom of this page or look at the pop-up text over the \Re symbols.
Proposed change aff	ects: UICC apps# ME X Radio Access Network Core Network
Title: ೫ (Correction to UTRA Carrier RSSI measurement tables in test cases
Source: ೫ <mark>।</mark>	RAN WG4
Work item code: 跆	T <mark>EI6 Date:</mark> 米 24/05/2004
Category: # U	Release: % Rel-6 se one of the following categories: Use one of the following releases: F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) etailed explanations of the above categories can Rel-4 (Release 4) e found in 3GPP TR 21.900. Rel-5 (Release 5) Rel-6 (Release 6) Rel-6
Reason for change:	 Table A.9.5A is entitled "UTRA Carrier RSSI absolute and relative accuracy" but the values for the relative accuracy test requirements are different from the absolute accuracy requirements. Hence, the test requirements for relative accuracy are incorrect. The UTRA Carrier RSSI test case is only defined for Band I. Impact from RF noise floor is different for different frequency bands and thereby test case dependent.
Summary of change:	 Change to lo at sensitivity level for frequency bands II and III (-94dBm for band I, -92dBm for band II and –91dBm for band III) in the UTRA Carrier RSSI test case. Table A.9.5A "UTRA Carrier RSSI absolute and relative accuracy" is split into two tables: A.9.5.A ""UTRA Carrier RSSI absolute accuracy" I and A.9.5.A2 for "UTRA Carrier RSSI relative accuracy". A note is added that T1 specifications have to consider the impact of the RF noise floor.
	Only the test case values are changed. The changes do not affect a UE that fulfils the core requirements.
Consequences if not approved:	# T1 might use wrong test requirements for UTRA Carrier RSSI relative measurements and therefore a UE that fulfills the core requirements does not necessarily pass the test case.

Clauses affected:	
Other specs affected:	# X M X V Test specifications X X X O&M Specifications
Other comments:	₭ Equivalent CRs in other Releases: CR662r1 cat. F to 25.133 v5.10.0

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

A.9.1.3 UTRA Carrier RSSI

A.9.1.3.1 Test Purpose and Environment

The purpose of this test is to verify that the UTRA Carrier RSSI measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.3. In this case both cells are in different frequency and compressed mode is applied. The gap length is 7, detailed definition is in TS 25.101 annex A.5, Set 1 of Table A.22. UTRA Carrier RSSI accuracy requirements are tested by using test parameters in Table A.9.5.

r			_					
Para	motor	Unit	Tes	st 1	Te	st 2	Tes	st 3
i arc	ineter	Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF	Channel		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
	c/lor	dB	-1	10		10	-^	10
PCCPCH	Ec/lor	dB	-*	12		12		12
SCH Ec/l	or	dB	-*	12		12		12
PICH Ec/	lor	dB	-1	15		15	-*	15
DPCH Ec	/lor	dB	-15	-	-6	-	-6	-
OCNS EC	/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
	Band I, IV,VI	dDm/ 2.94					-94.46	-94.46
loc	<u>Band II,</u> <u>V</u>	MHz	-52.22	-52.22	-70.27	-70.27	<u>-92.46</u>	<u>-92.46</u>
	Band III						<u>-91.46</u>	<u>-91.46</u>
Îor/loc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec	/Io, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
	<u>Band I,</u> <u>IV,VI</u>	dBm/3.84					-94	-94
Io, Note 1	<u>Band II,</u> V	MHz	-50	-50	-69	-69	<u>-92</u>	<u>-92</u>
	Band III						-91	-91
Propagation condition -			AW	'GN	AW	/GN	AW	'GN
NOTE 1:	NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They							
are not settable parameters themselves.								

Table A.9.5: UTRA Carrier RSSI Inter frequency test parameters

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

A.9.1.3.2 Test Requirements

The UTRA Carrier RSSI measurement accuracy shall meet the requirements in section 9.1.3. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm for frequency bands I, IV,VI; -97dBm for frequency bands II,V; and –96dBm for frequency band III) shall be added into the required accuracy defined in Section 9.1.2 as shown in Table A.9.5A and in Table A.9.5A2.

Table A.9.5A: UTRA Carrier RSSI absolute and relative	accuracy
---	----------

		Accura	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
UTRA Carrier RSSI	dBm	<u>±</u> -4 <u>(Note 1)</u> 5.2	<u>±</u> -7 <u>(Note 1)</u> 8.2	-94 <u>70</u> 87 (Band I, IV, VI) -9270 (Band II, V) -9170 (Band III)
	dBm	<u>±-4</u>	±7	-8770
	dBm	± 6	± 9	-7050

Note 1: Impact from RF noise floor is test case dependent and has not been considered. Noise floor shall be considered in T1 test case

Table A.9.5A2: UTRA Carrier RSSI relative accuracy

		Accur	acy [dB]	Conditions
Parameter	<u>Unit</u>	Normal condition	Extreme condition	<u>lo [dBm/3.84</u> <u>MHz]</u>
UTRA Carrier RSSI	<u>dBm</u>	<u>± 7 (Note 1)</u>	<u>± 11(Note 1)</u>	<u>-9470</u> (Band I, IV,VI) <u>-9270</u> (Band II, V) <u>-9170</u> (Band III)

Note 1: Impact from RF noise floor is test case dependent and has not been considered. Noise floor shall be considered in T1 test case

3GPP TSG RAN WG4 (Radio) Meeting #31

Beijing, China 10 - 14 May 2004

		CHANG	EREQ	UES	Т	CR-Form-v7
H	25	<mark>.133</mark> CR <mark>664</mark>	ж rev	<mark>1</mark> ^អ	Current vers	^{sion:} <mark>5.10.0</mark> [≆]
For <mark>HELP</mark> on u	sing	this form, see bottom of t	his page or l	look at	the pop-up text	over the X symbols.
Proposed change	affec	<i>ts:</i> UICC apps ೫ <mark></mark>	MEX	Radio	Access Netwo	rk Core Network
Title: ж	Со	rrections to lo, loc and R	SCP levels f	<mark>or testi</mark>	ng different free	uency bands
Source: ະ	RA	N WG4				
Work item code: ೫	TE	15			Date: ೫	24/05/2004
Category: ₩	F Use Deta be fo	one of the following categor F (correction) A (corresponds to a correc B (addition of feature), C (functional modification of D (editorial modification) iled explanations of the abo bund in 3GPP <u>TR 21.900</u> .	ies: tion in an ean of feature) ve categories	lier relea s can	Release: 器 Use <u>one</u> of 2 ase) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	Rel-5 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)
Reason for change) : Ж	The lo. loc and CPICH F	RSCP levels	in the	accuracy test c	ases of Section A.9 are
Summary of chang	ye: ೫	currently only defined for Additional frequency bar A.9.6, A.9.7, A.9.8, A.9.9 for Band II and Band III.	r Band I. nds are defir 9, A.9.11. loc	ned in ta c, Io an	able A.9.1, A.9. d CPICH RSCF	2, A.9.3, A.9.4, A.9.5, Plevels are also defined
		Isolated Impact Analyses	<u>s:</u>			
		Only the test case values the core requirements.	s are change	ed. The	e changes do no	ot affect a UE that fulfils
Consequences if not approved:	ж	Either testing of other fr wrong parameters for E requirements to fail a te	requency ba and II and E est case.	nds bu Band III	t Band I is not p This may caus	oossible or T1 may use e a UE fulfilling the core
Clauses affected:	ж	A.9.1.1.1.1, A.9.1.1.1.2	<mark>, A.9.1.2.1.1</mark>	, A.9.1	.2.1.2, A.9.1.2.2	2, A.9.1.4.1.1,
Other specs affected: Other comments:	X	A.9.1.4.1.2, A.9.1.5.1.1 Y N X Other core specification Test specification X O&M Specificatio	, A.9.1.5.2.1 ications is ns	, A.9.1 策 34	.6.1.1, A.9.1.6.2 4.121	2.1
		Equivalent CRs in othe	r Releases:	CR665	r1 cat. F to 25.	133 v6.5.0

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

A.9 Measurement Performance Requirements

Unless explicitly stated:

- Reported measurements shall be within defined range in 90 % of the cases.
- Measurement channel is 12.2 kbps as defined in TS 25.101 annex A, sub-clause A.3.1. This measurement channel is used both in active cell and cells to be measured.
- Physical channels used as defined in TS 25.101 annex C.
- Cell 1 is the active cell when in CELL_DCH state.
- Single task reporting.
- Power control is active.

A.9.1 Measurement Performance for UE

A.9.1.1 CPICH RSCP

A.9.1.1.1 Test Purpose and Environment

The purpose of this test is to verify that the CPICH RSCP measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.

A.9.1.1.1.1 Intra frequency test parameters

In this case all cells are on the same frequency. Both CPICH RSCP intra frequency absolute and relative accuracy requirements are tested by using test parameters in Table A.9.1.

Dere		l lm it	Te	st 1	Test 2		Test 3		
Para	meter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Char	nnel number		Char	nel 1	Char	nel 1	Char	nel 1	
CPICH_Ec/lor		dB	-*	10	-1	0	-1	10	
PCCPCH_Ec/lo	or	dB	- '	2	-1	2	-1	2	
SCH_Ec/lor		dB	-^	2	-1	2	-1	2	
PICH_Ec/lor		dB	- ^	15	-1	5	-1	15	
DPCH_Ec/lor		dB	-15	-	-15	-	-15	-	
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94	
	Band I						-97	.47	
loc	Band II	dBm/ 3.84 MHz	-75.54		-59.98		-95.47		
	Band III						-94.47		
Îor/loc		dB	4	0	9	0	0	-6.53	
	Band I						-107.47	-114.0	
CPICH RSCP, Note 1	Band II	dBm	-81.5	-85.5	-60.98	-69.88	<u>-105.47</u>	<u>-112.0</u>	
	Band III						<u>-104.47</u>	<u>-111.0</u>	
	Band I						-6) 4	
lo, Note 1	Band II	dBm/3.84 MHz	-6	69	-5	50	<u>- 9</u>	<u>)2</u>	
	Band III						-9	<u>}1</u>	
Propagation co	ndition	-	AW	'GN	AW	'GN	AWGN		
NOTE 1: CPIC	CH RSCP and lo	levels have been calc	ulated from	n other par	ameters fo	or informati	on purpose	es. They	
are r	not settable parar	neters themselves.							
Tests shall be o	done sequentially	. Test 1 shall be done	first. After	test 1 has	been exec	cuted test p	oarameters	for tests	
2 and 3 shall be	e set within 5 sec	onds so that UE does	not loose	the Cell 2 i	in between	the tests.			

Table A.9.1: CPICH RSCP Intra frequency test parameters

A.9.1.1.1.2 Inter frequency test parameters

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in TS 25.101 annex A.5, Set 1 of Table A.22. . CPICH RSCP inter frequency relative accuracy requirements are tested by using test parameters in Table A.9.2.

Dara	motor	Unit	Tes	st 1	Tes	st 2
Faia	neter	Unit	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Cha	annel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/lo	r	dB	-1	10	-1	10
PCCPCH_Ec	/lor	dB	-1	12	-1	12
SCH_Ec/lor		dB	-1	12	-1	12
PICH_Ec/lor		dB	-1	15	-1	15
DPCH_Ec/lor		dB	-15	-	-15	-
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94
	Band I				-84.00	-94.46
loc	Band II	dBm/3.84 MHz	-60.00	-60.00	<u>-82.0</u>	<u>-92.46</u>
	Band III				<u>-81.0</u>	<u>-91.46</u>
Îor/loc	•	dB	9.54	9.54	0	-9.54
СЫСН	Band I				-94.0	-114.0
RSCP, Note	Band II	dBm	-60.46	-60.46	<u>-92.0</u>	<u>-112.0</u>
1	Band III				<u>-91.0</u>	<u>-111.0</u>
	Band I				-81.0	-94.0
lo, Note 1	Band II	dBm/3.84 MHz	-50.00	-50.00	<u>-79.0</u>	<u>-92.0</u>
	Band III				<u>-78.0</u>	<u>-91.0</u>
Propagation of	opagation condition - AWGN AWGN					/GN
NOTE 1: CP	ICH RSCP and poses. They ar	lo levels have bee e not settable para	en calculated fro meters themsel	om other parame lves.	eters for informa	ition
Tests shall be for test 2 shal	e done sequenti I be set within 5	ally. Test 1 shall be seconds so that U	e done first. Afte JE does not loos	er test 1 has bee se the Cell 2 in b	n executed test between the test	parameters ts.

Table A.9.2: CPICH RSCP Inter frequency tests parameters

A.9.1.1.2 Test Requirements

The CPICH RSCP measurement accuracy shall meet the requirements in section 9.1.1.

A.9.1.2 CPICH Ec/lo

A.9.1.2.1 Test Purpose and Environment

The purpose of this test is to verify that the CPICH Ec/Io measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.2.

A.9.1.2.1.1 Intra frequency test parameters

In this case all cells are in the same frequency. Both CPICH Ec/Io absolute and relative accuracy requirements are tested by using test parameters in Table A.9.3

			Tes	st 1	Tes	st 2	Tes	st 3
Para	imeter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Cha	nnel number		Char	nel 1	Char	nel 1	Char	nel 1
CPICH_Ec/lor		dB	-1	10	-1	0	-1	10
PCCPCH_Ec/I	or	dB	-1	2	-1	2	-1	12
SCH_Ec/lor		dB	-1	2	-1	2	-1	12
PICH_Ec/lor		dB	-1	15	-1	5	-1	15
DPCH_Ec/lor		dB	-15	-	-15	-	-6	-
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	. <u>-</u> 2.56	-0.94
	Band I						-94	.98
loc	Band II	dBm/ 3.84 MHz	-56	5.98	-89	.07	-92	.98
	Band III						<u>-91.98</u>	
Îor/loc		dB	3.0	3.0	-2.9	-2.9	-9.0	-9.0
CPICH Ec/lo, I	Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0 -20.0	
	Band I						-6	94
lo, Note 1	Band II	dBm/3.84 MHz	-5	50	-86		-9	<u>32</u>
	Band III						-9	<u>)1</u>
Propagation co	ondition	-	AW	/GN	AW	'GN	AWGN	
NOTE 1: CPI	NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They					s. They		
are	not settable parar	meters themselves.						
Tests shall be	done sequentially	. Test 1 shall be done	first. After	test 1 has	been exec	cuted test p	parameters	s for tests
2 and 3 shall b	e set within 5 sec	onds so that UE does	not loose	the Cell 2 i	in between	the tests.		

Table A.9.3: CPICH Ec/lo Intra frequency test parameters

A.9.1.2.1.2 Inter frequency test parameters

In this case both cells are in different frequency and compressed mode is applied. The gap length is 7, detailed definition is in TS 25.101 annex A.5, Set 1 of Table A.22. CPICH Ec/Io inter frequency relative accuracy requirements are tested by using test parameters in Table A.9.4.

Table A.9.4: CPICH Ec/lo Inter frequ	ency tests parameters

Dara	motor	Unit	Tes	st 1	Tes	st 2	Tes	Test 3	
Faid	meter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF nur	- Channel nber		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2	
CPICH_Ec	/lor	dB	-1	10	-1	0	-1	0	
PCCPCH_	Ec/lor	dB	-1	12	-1	2	-1	2	
SCH_Ec/lo	or	dB	-1	12	-1	2	-1	2	
PICH_Ec/l	or	dB	-1	15	-1	5	-1	15	
DPCH_Ec/	/lor	dB	-15	-	-6	-	-6	-	
OCNS_Ec/	/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94	
	Band I						-94.46	-94.46	
loc	Band II	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	<u>-92.46</u>	<u>-92.46</u>	
	Band III						<u>-91.46</u>	<u>-91.46</u>	
Îor/loc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54	
CPICH Ec/	lo, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0	
	Band I						-94	-94	
lo, Note 1	Band II	dBm/3.84 MHz	-50	-50	-86	-86	<u>-92</u>	<u>-92</u>	
	Band III						<u>-91</u>	<u>-91</u>	
Propagatio	Propagation condition - AWGN AWGN AWGN						'GN		
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.									
Tests shall	be done seq	uentially. Test	1 shall be do	one first. After	test 1 has be	en executed	test paramet	ers for tests	
2 and 3 sh	all be set with	nin 5 seconds :	so that UE do	bes not loose	the Cell 2 in I	petween the t	ests.		

A.9.1.2.2 Test Requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in section 9.1.2. In case of the absolute intrafrequency CPICH_Ec/Io measurement and relative inter-frequency CPICH_Ec/Io measurement accuracy test cases the effect of assumed thermal noise and noise generated in the receiver (–99 dBm for frequency band I, -97dBm for frequency band II and –96dBm for frequency band III) shall be added into the required accuracy. The test requirements for the absolute intra -frequency CPICH_Ec/Io measurement are defined in Section 9.1.2 as shown in Table A.9.4A. The test requirements for the relative inter-frequency CPICH_Ec/Io measurement are defined in Section 9.1.2 as shown in Table A.9.4B.

Table A.9.4A: CPICH_E	Ec/lo Intra-frequency	/ absolute accuracy
-----------------------	-----------------------	---------------------

		Accuracy [dB]		Conditions
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dB	-2.71.5 for -14 ≤ CPICH Ec/lo -3.22 for -16 ≤ CPICH Ec/lo < -14 -4.23 for -20 ≤ CPICH Ec/lo < -16	-4.23	-9487 <u>(Band I)</u> -9285 (Band II,) -9184 (Band III)
CFICH_EC/IO	uв	\pm 1.5 for -14 \leq CPICH Ec/lo \pm 2 for -16 \leq CPICH Ec/lo $<$ -14 \pm 3 for -20 \leq CPICH Ec/lo $<$ -16	± 3	-8750 (Band I) -8550 (Band II) -8450 (Band III)

Table A.9.4D. CPICH EC/IO Inter frequency relative accuracy	Table A.9.4B: CPICH	Ec/lo Inter freque	encv relative accuracy
---	---------------------	--------------------	------------------------

		Accuracy [dB]		Conditions
Parameter	Unit	Normal condition	Extreme condition	lo [dBm]
		± 2.7 for -14 \leq CPICH Ec/lo		-9487 (Band I)
		± 3.2 for -16 \leq CPICH Ec/lo < -14	± 4.2	-9285 (Band II)
	dP	\pm 4.2 for -20 \leq CPICH Ec/lo < -16		<u>-9184 (Band III)</u>
CFICIT_EC/IO	ub	\pm 1.5 for -14 \leq CPICH Ec/lo		-8750 (Band I)
		\pm 2 for -16 \leq CPICH Ec/lo < -14	± 3	-8550 (Band II)
		\pm 3 for -20 \leq CPICH Ec/lo < -16		<u>-8450 (Band III)</u>

A.9.1.4 SFN-CFN observed time difference

A.9.1.4.1 Test Purpose and Environment

The purpose of this test is to verify that the SFN-CFN observed time difference measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.7.

A.9.1.4.1.1 Intra frequency test parameters

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

In this case all cells are in the same frequency. Table A.9.6 defines the limits of signal strengths and code powers, where the requirements are applicable.

Parameter	Unit	Cell 1	Cell 2			
UTRA RE Channel number		Channel 1	Channel 1			
CPICH Ec/lor	dB	-10	-10			
PCCPCH Ec/lor	dB	-12	-12			
SCH_Ec/lor	dB	-12	-12			
PICH_Ec/lor	dB	-15	-15			
DPCH_Ec/lor	dB	-15	-15			
OCNS	dB	-1.11	-1.11			
Îor/loc	dB	10.5	10.5			
loc	dBm/ 3.84 MHz	<i>Io -13.7 dB = loc,</i> Note 1	<i>Io -13.7 dB = loc,</i> Note 1			
Range 1:lo	dPm/2 94 MHz	-9470 <u>(Band I)</u> -9270 (Band II) -9170 (Band III)	-9470 <u>(Band I)</u> -9270 (Band II) -9170 (Band III)			
Range 2: Io		-9450 <u>(Band I)</u> <u>-9250 (Band II)</u> -9150 (Band III)	-9450 <u>(Band I</u> <u>-9250 (Band II</u> <u>-9150 (Band III)</u>			
Propagation condition	-	AWG				
NOTE 1: <i>loc</i> level shall be adjusted according the total signal power spectral density <i>lo</i> at receiver input and the geometry factor <i>lor/loc</i> .						

Table A.9.6: SFN-CFN observed time difference Intra frequency test parameters

A.9.1.4.1.2 Inter frequency test parameters

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

In this test case both cells are in different frequency and compressed mode is applied. The gap length is 7, detailed definition is in TS 25.101 annex A.5, Set 1 of Table A.22. Table A.9.7 defines the limits of signal strengths and code powers, where the requirement is applicable.

Parameter	Unit	Cell 1	Cell 2				
UTRA RF Channel number		Channel 1	Channel 2				
CPICH_Ec/lor	dB	-10	-10				
PCCPCH_Ec/lor	dB	-12	-12				
SCH_Ec/lor	dB	-12	-12				
PICH_Ec/lor	dB	-15	-15				
DPCH_Ec/lor	dB	-15	-15				
OCNS	dB	-1.11	-1.11				
Îor/loc	dB	10.1	10.1				
loc	dBm/ 3.84 MHz	<i>Io -10.6 dB = loc,</i> Note 1	<i>Io -10.6 dB = loc,</i> Note 1				
Range 1:lo		-9470 (Band I) -9270 (Band II)	-9470 (Band I) -9270 (Band II				
	dBm/3.84 MHz	<u>-9170 (Band III)</u>	<u>-9170 (Band III)</u>				
Range 2: Io		-9450 <u>(Band I)</u> -9250 (Band II) -9150 (Band III)	-9450 <u>(Band I)</u> -9250 (Band II) -9150 (Band III)				
Propagation condition	-	AW	GN				
NOTE 1: <i>Icc</i> level shall be adjusted in each carrier frequency according the total signal power spectral density <i>Ic</i> at receiver input and the geometry factor <i>lor/loc</i>							

Table A.9.7: SFN-CFN observed time difference Inter frequency tests parameters

A.9.1.4.2 Test Requirements

The SFN-CFN observed time difference measurement accuracy shall meet the requirements in section 9.1.7.

A.9.1.5 SFN-SFN observed time difference

A.9.1.5.1 SFN-SFN observed time difference type 1

A.9.1.5.1.1 Test Purpose and Environment

The purpose of this test is to verify that the SFN-SFN observed time difference type 1 measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.8.1.

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

In this case all cells are in the same frequency. Table A.9.8 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table A.9.8: SFN-SFN observed time difference type 1 Intra frequency test parameters

Parameter	Unit	Cell 1	Cell 2				
UTRA RF Channel number		Channel 1	Channel 1				
CPICH_Ec/lor	dB	-10	-10				
PCCPCH_Ec/lor	dB	-12	-12				
SCH_Ec/lor	dB	-12	-12				
PICH_Ec/lor	dB	-15	-15				
S-CCPCH_Ec/lor	dB	-12	-12				
OCNS	dB	-1.29	-1.29				
Îor/loc	dB	10.5	10.5				
loc	dBm/ 3.84 MHz	<i>Io -13.7 dB = loc,</i> Note 1	<i>Io -13.7 dB = loc,</i> Note 1				
Range 1:lo		-9470 <u>(Band I)</u> -9270 (Band II) -9170 (Band III)	-9470 <u>(Band I)</u> - <u>9270 (Band II</u> -9170 (Band III)				
	dBm/3.84 MHz						
Range 2: Io		-9450 <u>(Band I)</u> - <u>9250 (Band II)</u> -9150 (Band III)	-9450 <u>(Band I)</u> <u>-9250 (Band II</u> -9150 (Band III)				
Propagation condition	-	AW	GN				
NOTE 1: <i>loc</i> level shall be adjusted according the total signal power spectral density <i>lo</i> at receiver input and the geometry factor <i>lor/loc</i> .							

A.9.1.5.1.2 Test Requirements

The SFN-SFN observed time difference type 1 measurement accuracy shall meet the requirements in section 9.1.8.1

A.9.1.5.2 SFN-SFN observed time difference type 2 without IPDL period active

A.9.1.5.2.1 Test Purpose and Environment

The purpose of this test is to verify that the SFN-SFN observed time difference type 2 measurement accuracy without IPDL period active is within the specified limits. This test will verify the requirements in section 9.1.8.2.

During the test the time difference between Cell 1 and 2 can be set to value from -1279.75 to 1280 chips.

In this case all cells are in the same frequency. Table A.9.9 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table A.9.9: SFN-SFN observed time difference type 2 Intra frequency test parameters

Parameter	Unit	Cell 1	Cell 2
UTRA RF Channel number		Channel 1	Channel 1
CPICH_Ec/lor	dB	-10	-10
PCCPCH_Ec/lor	dB	-12	-12
SCH_Ec/lor	dB	-12	-12
PICH_Ec/lor	dB	-15	-15
DPCH_Ec/lor	dB	-15	-15
OCNS	dB	-1.11	-1.11
Îor/loc	dB	10.5	10.5
loc	dBm/ 3.84 MHz	<i>Io -13.7 dB = loc,</i> Note 1	<i>Io -13.7 dB = loc,</i> Note 1
CPICH_Ec/lo, Note 2	dB	-13.2	-13.2
Dense 4de		-9470 <u>(Band I)</u>	-9470 <u>(Band I)</u>
Range 110		<u>-9270 (Band II)</u>	<u>-9270 (Band)</u>
	dBm/2 84 MUz	<u>-9170 (Banu III)</u>	<u>-9170 (Banu III)</u>
		-94 -50 (Band I)	-94 -50 (Band I)
Range 2: Io		-9450 (Band II)	-9430 <u>(Band II)</u> -92 -50 (Band II)
Range 2. 10		-91 -50 (Band III)	-91 -50 (Band III)
Propagation condition	-	AW	GN
NOTE 1: loc level shall be ac	justed according the	total signal power spectral den	sity lo at receiver input and
the geometry factor	Îor/loc.		· ·
NOTE 2: Io and CPICH Ec/Ic	levels have been cal	culated from other parameters	for information purposes.
They are not settab	le parameters themse	elves.	

A.9.1.5.2.2 Test Requirements

The SFN-SFN observed time difference type 2 measurement accuracy shall meet the requirements in section 9.1.8.2

A.9.1.5.3 SFN-SFN observed time difference type 2 with IPDL period active

A.9.1.5.3.1 Test Purpose and Environment

This requirement is valid only for UEs supporting IPDL measurements.

The purpose of this test is to verify that the SFN-SFN observed time difference type 2 measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.8.2.

During the test the time difference between Cell 1 and 2 shall be set according to the assistance data defined in table A.9.10A.

In this case all cells are in the same frequency. Table A.9.10 defines the limits of signal strengths and code powers, where the requirements are applicable.

Parameter	Unit	Ce	ll 1	Ce	ll 2		
Timo		No idle	Idle period	No idle	Idle period		
		period	in Cell 1	period	in Cell 1		
UTRA RF Channel number		Channel 1	Channel 1	Channel 1	Channel 1		
CPICH_Ec/lor	dB	-10	-10	-10	-10		
PCCPCH_Ec/lor	dB	-12	-12	-12	-12		
SCH_Ec/lor	dB	-12	-12	-12	-12		
PICH_Ec/lor	dB	-15	-15 -15		-15		
DPCH_Ec/lor	dB	-15	-15	-	-		
OCNS	dB	-1.11	-1.11	-0.94	-0.94		
Îor/loc	dB	10.5	-24.5	-6	-6		
loc	dBm/ 3.84 MHz		-8	80			
lo, Note 1	dBm/3.84 MHz	-69.04	-79.01	-69.04	-79.01		
CPICH_Ec/lo, Note 1	dB	-10.46	-35.49	-26.96	-16.99		
Propagation condition - AWGN							
NOTE 1: Io and CPICH Ec/Ic	levels have been ca	lculated from ot	her parameters	for information	n purposes.		
They are is not sett	able parameters then	nselves.					

Table A.9.10: SFN-SFN observed time difference type 2 Intra frequency test parameters

When verifying the SFN-SFN observed time difference type 2 intra frequency measurement accuracy with IPDL period active the idle period parameters in table A.9.10A shall be used.

Table A.9.10A: SFN-SFN observed time difference type 2 assistance data test parameters

Parameter	Unit	Cell 1
Search Window Size	Chips	80
IP_Status	-	Continuous
IP_Spacing	Frames	10
IP_Lenght	Symbols	10
IP_Offset	frame	NA
Seed	integer	13
Burst_Start		NA
Burst_Length		NA
Burst_Freq		NA

NOTE: The total signal power spectral density *Io* will change only downwards during BS transmission gap.

A.9.1.5.3.2 Test Requirements

The SFN-SFN observed time difference type 2 measurement accuracy shall meet the requirements in section 9.1.8.2

A.9.1.6 UE Rx-Tx time difference

A.9.1.6.1 UE Rx-Tx time difference type 1

A.9.1.6.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE Rx-Tx time difference type 1 measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.9.1

Table A.9.11 defines the limits of signal strengths and code powers, where the requirements are applicable.

Parameter	Unit	Cell 1
UTRA RF Channel number		Channel 1
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DPCH_Ec/lor	dB	-15
OCNS	dB	-1.11
Îor/loc	dB	10.5
	dBm/ 2.94 MHz	Io - 10.9 dB = Ioc,
100	UDITI/ 3.04 WILIZ	Note 1
		-9450 <u>(Band I)</u>
lo	dBm/3.84 MHz	<u>-9250 (Band II)</u>
		<u>-9150 (Band III)</u>
Propagation condition	AWGN	
NOTE 1: loc level shall be adjust	ed according the tota	l signal power spectral
density lo at receiver in	put and the geometry	factor lor/loc.

Table A.9.11: UE Rx-Tx time difference type 1 intra frequency test parameters

A.9.1.6.1.2 Test Requirements

The UE Rx-Tx time difference type 1 measurement accuracy shall meet the requirements in section 9.1.9.1.

A.9.1.6.2 UE Rx-Tx time difference type 2

A.9.1.6.2.1 Test Purpose and Environment

The purpose of this test is to verify that the UE Rx-Tx time difference type 2 measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.9.2.

Table A.9.12 defines the limits of signal strengths and code powers, where the requirements are applicable.

	Table A.9.12: UE Rx-Tx time difference	e type 2 intra fr	requency test	parameters
--	--	-------------------	---------------	------------

Parameter	Unit	Cell 1	
UTRA RF Channel number		Channel 1	
CPICH_Ec/lor	dB	-10	
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
DPCH_Ec/lor	dB	-15	
OCNS	dB	-1.11	
Îor/loc	dB	10.5	
loc	dBm/ 3.84 MHz	Io -10.9 dB = Ioc, Note 1	
lo	dBm/ 3.84 MHz	-9450 <u>(Band I)</u> <u>-9250 (Band II)</u> -9150 (Band III)	
Propagation condition	-	AWGN	
NOTE 1: loc level shall be a	adjusted according the	e total signal power spectral	
density lo at recei	ver input and the geo	metry factor Îor/loc.	

A.9.1.6.2.2 Test Requirements

The UE Rx-Tx time difference type 2 measurement accuracy shall meet the requirements in section 9.1.9.2.

3GPP TSG RAN WG4 (Radio) Meeting #31

Beijing, China 10 - 14 May 2004

			СН	ANGE	EREQ	UE	ST				CR-Form-v7
¥	25	<mark>.133</mark>	CR <mark>66</mark>	5	ж rev	1	Ħ	Current vers	sion:	6.5.0	ж
For <u>HELP</u> on t	ısing	this fori	m, see bo	ttom of thi	is page or	look	at the	e pop-up text	t over	the	nbols.
Proposed change	affec	<i>ts:</i> U	IICC apps	¥ 📃	ME	Rac	lio Ac	ccess Netwo	rk	Core Ne	twork
Title: #	^{Co}	rrection	<mark>is to lo, lo</mark>	c and RS	CP levels	for te	sting	different free	quenc	y bands	
Source: #	RA RA	N WG4	1								
Work item code: भ	B <mark>TE</mark>	16						<i>Date:</i> ೫	24/	/05/2004	
Category: ೫	B F Use Deta be fo	one of t F (corr A (corr B (add C (fund D (edite iled exp ound in 3	he following ection) responds to ition of feat ctional mod orial modifi lanations c 3GPP <u>TR 2</u>	g categorie a correctio fure), ification of cation) f the above <u>1.900</u> .	es: on in an ea feature) e categorie	<i>rlier re</i> s can	lease	Release: # Use <u>one</u> of 2 () R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	the fc (GSN (Rela (Rela (Rela (Rela (Rela (Rela (Rela	I-6 M Phase 2) ease 1996) ease 1997) ease 1998) ease 1999) ease 4) ease 5) ease 6)	eases:
Reason for chang	е: ж	The lo	, loc and (SCP levels	s in th	e aco	curacy test c	ases	of Section	A.9 are
Summary of chan	ge:	Additic A.9.6, for Bar	nal freque A.9.7, A.9 nd II Band	efined for l ency banc 0.8, A.9.9, III, band	Band I. Is are defi A.9.11. Ic IV, band V	ned ir oc, lo a / and	n tabl and (banc	e A.9.1, A.9. CPICH RSCI J VI	.2, A.9 > leve	9.3, A.9.4, els are also	A.9.5, defined
		<u>Isolate</u>	d Impact	Analyses:							
		Only th the co	ne test cas re require	se values ments.	are chang	ged. T	he ch	hanges do n	ot affe	ect a UE th	at fulfils
Consequences if not approved:	ж	Eithe wrong cause	r testing o g paramet e a UE ful	f other fre ers for Ba illing the o	quency b ind II, Bar core requi	ands I Id III, I remei	but B band nts to	and I is not p IV, band V a fail a test ca	oossil and b ase.	ble or T1 n and VI.Thi	nay use s may
Clauses affected:	ж	A.9.1	.1.1.1, A.9).1.1.1.2,	A.9.1.2.1.	<mark>1, A.9</mark>).1.2. ⁻	1.2, A.9.1.2.2	2, A.9).1.4.1.1,	
Other specs affected:	£	A.9.1 Y N X X X	.4.1.2, A.S Other con Test spec O&M Spec	0.1.5.1.1, . re specific cifications ecification	A.9.1.5.2. ations s	1, A.9 Ж).1.6. ⁻ 34.1:	1.1, A.9.1.6.2 21	2.1		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

A.9 Measurement Performance Requirements

Unless explicitly stated:

- Reported measurements shall be within defined range in 90 % of the cases.
- Measurement channel is 12.2 kbps as defined in TS 25.101 annex A, sub-clause A.3.1. This measurement channel is used both in active cell and cells to be measured.
- Physical channels used as defined in TS 25.101 annex C.
- Cell 1 is the active cell when in CELL_DCH state.
- Single task reporting.
- Power control is active.

A.9.1 Measurement Performance for UE

A.9.1.1 CPICH RSCP

A.9.1.1.1 Test Purpose and Environment

The purpose of this test is to verify that the CPICH RSCP measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.

A.9.1.1.1.1 Intra frequency test parameters

In this case all cells are on the same frequency. Both CPICH RSCP intra frequency absolute and relative accuracy requirements are tested by using test parameters in Table A.9.1.

Bara	motor	Unit	Tes	st 1	Tes	st 2	Test 3	
Parameter		Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Chai	nnel number		Char	nel 1	Char	nel 1	Char	inel 1
CPICH_Ec/lor		dB	-1	0	-1	0	-1	0
PCCPCH_Ec/le	or	dB	-1	2	-1	2	-1	2
SCH_Ec/lor		dB	-1	2	-1	2	-1	2
PICH_Ec/lor		dB	-1	5	-1	5	-1	5
DPCH_Ec/lor		dB	-15	-	-15	-	-15	-
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
	Band I, IV, VI						-97	.47
loc	Band II, V	dBm/ 3.84 MHz	-77.54		-59.98		<u>-95.47</u>	
	Band III						<u>-94.47</u>	
Îor/loc		dB	4	0	9	0	0	-6.53
СЫСН	<u>Band I, IV, VI</u>			-87.5	-60.98	-69.88	-107.47	-114.0
RSCP Note 1	Band II, V	dBm	-83.5				<u>-105.47</u>	<u>-112</u>
	Band III						<u>-104.47</u>	<u>-111</u>
	Band I, IV, VI						-9)4
lo, Note 1	Band II, V	dBm/3.84 MHz	-7	71	-5	50	<u>-92</u>	
	Band III						<u>-91</u>	
Propagation co	agation condition - AWGN AWGN A				AW	GN		
NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. The						es. They		
are	not settable paran	neters themselves.						
Tests shall be	done sequentially	. Test 1 shall be done	first. After	test 1 has	been exec	cuted test p	parameters	for tests
2 and 3 shall b	e set within 5 seco	onds so that UE does	not loose	the Cell 2 i	n between	the tests.		

 Table A.9.1: CPICH RSCP Intra frequency test parameters

A.9.1.1.1.2 Inter frequency test parameters

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in TS 25.101 annex A.5, Set 1 of Table A.22. . CPICH RSCP inter frequency relative accuracy requirements are tested by using test parameters in Table A.9.2.

Deremeter		Unit	Те	st 1	Test 2		
Fala	lielei	Cell 1 Cell 2		Cell 2	Cell 1	Cell 2	
UTRA RF Cha	annel number		Channel 1	Channel 2	Channel 1	Channel 2	
CPICH_Ec/lo	r	dB	-^	10	-1	10	
PCCPCH_Ec	/lor	dB	-^	12	-1	12	
SCH_Ec/lor		dB		12	-1	12	
PICH_Ec/lor		dB		15	-1	15	
DPCH_Ec/lor		dB	-15	-	-15	-	
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	
	<u>Band I, IV,</u> <u>VI</u>	dBm/2.94 MUz	60.00	60.00	-84.00	-94.46	
IOC	Band II, V		-00.00	-00.00	<u>-82.00</u>	<u>-92.46</u>	
Band III					<u>-81.00</u>	<u>-91.46</u>	
Îor/loc		dB	9.54 9.54		0	-9.54	
CPICH RSCR_Noto	<u>Band I, IV,</u> <u>VI</u>	dDaa	-60.46	-60.46	-94.0	-114.0	
	Band II, V	ubiii			<u>-92.0</u>	<u>-112.0</u>	
1	Band III				<u>-91.0</u>	<u>-111.0</u>	
la Nota 1	<u>Band I, IV,</u> <u>VI</u>		50.00	50.00	-81.0	-94.0	
IO, NOLE I	Band II, V		-50.00	-50.00	<u>-79.0</u>	<u>-92.0</u>	
	Band III				<u>-78.0</u>	<u>-91.0</u>	
Propagation condition - AWGN				AW	/GN		
NOTE 1: CP	ICH RSCP and	Io levels have bee	en calculated fro	om other parame	ters for informa	ition	
pui	rposes. They ar	e not settable para	ameters themse	lves.			
Tests shall be for test 2 shal	done sequenti I be set within 5	ally. Test 1 shall be seconds so that L	e done first. Afte JE does not loos	er test 1 has bee se the Cell 2 in b	n executed test etween the test	parameters ts.	

Table A.9.2: CPICH RSCP Inter frequency tests parameters

A.9.1.1.2 Test Requirements

The CPICH RSCP measurement accuracy shall meet the requirements in section 9.1.1.

A.9.1.2 CPICH Ec/lo

A.9.1.2.1 Test Purpose and Environment

The purpose of this test is to verify that the CPICH Ec/Io measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.2.

A.9.1.2.1.1 Intra frequency test parameters

In this case all cells are in the same frequency. Both CPICH Ec/Io absolute and relative accuracy requirements are tested by using test parameters in Table A.9.3

_			Te	st 1	Te	st 2	Test 3	
Para	ameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Cha	nnel number		Char	Channel 1		nel 1	Char	nel 1
CPICH_Ec/lor		dB	-1	10	-1	0	-1	0
PCCPCH_Ec/	or	dB	-1	2	-1	2	-1	2
SCH_Ec/lor		dB	-1	2	-1	2	-1	2
PICH_Ec/lor		dB	-1	15	-1	5	-1	15
DPCH_Ec/lor		dB	-15	-	-15	-	-6	-
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	.2.56	-0.94
loc Band I, IV, VI Band II, V							-94.98	
		dBm/ 3.84 MHz	-56.98		-89.07		<u>-92.98</u>	
	Band III						<u>-91.98</u>	
Îor/loc		dB	3.0	3.0	-2.9	-2.9	-9.0	-9.0
CPICH Ec/lo, I	Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
	Band I, IV, VI						-6	94
lo, Note 1	Band II, V	dBm/3.84 MHz	-5	50	-86		<u>-92</u>	
	Band III						-91	
Propagation co	ondition	-	AW	/GN	AW	'GN	AWGN	
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. The						s. They		
are	not settable paran	neters themselves.						
Tests shall be	done sequentially.	. Test 1 shall be done	first. After	test 1 has	been exec	cuted test p	parameters	s for tests
2 and 3 shall b	e set within 5 seco	onds so that UE does	not loose	the Cell 2 i	in between	the tests.		

Table A.9.3: CPICH Ec/lo Intra frequency test parameters

A.9.1.2.1.2 Inter frequency test parameters

In this case both cells are in different frequency and compressed mode is applied. The gap length is 7, detailed definition is in TS 25.101 annex A.5, Set 1 of Table A.22. CPICH Ec/Io inter frequency relative accuracy requirements are tested by using test parameters in Table A.9.4.

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/lor		dB	-10		-10		-10	
PCCPCH_Ec/lor		dB	-12		-12		-12	
SCH_Ec/lor		dB	-12		-12		-12	
PICH_Ec/lor		dB	-15		-15		-15	
DPCH_Ec/lor		dB	-15	-	-6	-	-6	-
OCNS_Ec/lor		dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
loc	<u>Band I,</u> IV, VI	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46
	<u>Band II,</u> ⊻						<u>-92.46</u>	<u>-92.46</u>
	Band III						<u>-91.46</u>	<u>-91.46</u>
Îor/loc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/lo, Note 1		dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
lo, Note 1	<u>Band I,</u> IV, VI	dBm/3.84 MHz	-50	-50	-86	-86	-94	-94
	<u>Band II,</u> ⊻						<u>-92.0</u>	<u>-92.0</u>
	Band III						<u>-91.0</u>	<u>-91.0</u>
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They								
are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests								
2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

Table A.9.4: CPICH Ec/lo Inter frequency tests parameters
A.9.1.2.2 Test Requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in section 9.1.2. In case of the absolute intra - frequency CPICH_Ec/Io measurement and relative inter-frequency CPICH_Ec/Io measurement accuracy test cases the effect of assumed thermal noise and noise generated in the receiver (-99 dBm_for frequency bands I, IV and VI; - 97dBm for frequency bands II and V; and -96dBm for frequency band III) shall be added into the required accuracy. The test requirements for the absolute intra -frequency CPICH_Ec/Io measurement are defined in Section 9.1.2 as shown in Table A.9.4A. The test requirements for the relative inter-frequency CPICH_Ec/Io measurement are defined in Section 9.1.2 as shown in Table A.9.4B.

		Accuracy [dB]		Conditions
Parameter	Unit	Normal condition	Extreme condition	Conditions Io [dBm/3.84 MHz] -9487 (Band I, IV, VI) -9285 (Band II, V) -9184 (Band III) -8750 (Band I, IV, VI) -8550 (Band II, V) -84 -50 (Band
	٩Đ	-2.71.5 for -14 \leq CPICH Ec/lo -3.22 for -16 \leq CPICH Ec/lo < -14 -4.23 for -20 \leq CPICH Ec/lo < -16	-4.23	-9487 <u>(Band</u> <u>I, IV, VI)</u> -9285 (Band <u>II, V)</u> -9184 (Band <u>III)</u>
	üБ	\pm 1.5 for -14 \leq CPICH Ec/lo \pm 2 for -16 \leq CPICH Ec/lo < -14 \pm 3 for -20 \leq CPICH Ec/lo < -16	±3	-8750 <u>(Band</u> <u>I, IV, VI)</u> -8550 (Band <u>II, V)</u> -8450 (Band <u>III)</u>

Fable A.9.4A: CPICH	_Ec/lo Intra-frequency	/ absolute accuracy
---------------------	------------------------	---------------------

Table A.9.4B: CPICH_Ec/lo Inter frequency relative accuracy

		Accuracy [dB]	Accuracy [dB]		
Parameter	Unit	Normal condition	Extreme condition	lo [dBm]	
	٩Ŀ	± 2.7 for -14 \leq CPICH Ec/lo ± 3.2 for -16 \leq CPICH Ec/lo $<$ -14 ± 4.2 for -20 \leq CPICH Ec/lo $<$ -16	± 4.2	-9487 <u>(Band</u> <u>I, IV, VI)</u> -9285 (Band <u>II, V)</u> -9184 (Band III)	
	đВ	\pm 1.5 for -14 \leq CPICH Ec/lo \pm 2 for -16 \leq CPICH Ec/lo $<$ -14 \pm 3 for -20 \leq CPICH Ec/lo $<$ -16	± 3	-8750 <u>(Band</u> <u>I, IV, VI)</u> -8550 (Band <u>II, V)</u> -8450 (Band <u>III)</u>	

A.9.1.4 SFN-CFN observed time difference

A.9.1.4.1 Test Purpose and Environment

The purpose of this test is to verify that the SFN-CFN observed time difference measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.7.

A.9.1.4.1.1 Intra frequency test parameters

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

In this case all cells are in the same frequency. Table A.9.6 defines the limits of signal strengths and code powers, where the requirements are applicable.

Parameter	Unit	Cell 1	Cell 2		
UTRA RF Channel number		Channel 1	Channel 1		
CPICH_Ec/lor	dB	-10	-10		
PCCPCH_Ec/lor	dB	-12	-12		
SCH_Ec/lor	dB	-12	-12		
PICH_Ec/lor	dB	-15	-15		
DPCH_Ec/lor	dB	-15	-15		
OCNS	dB	-1.11	-1.11		
Îor/loc	dB	10.5	10.5		
loc	dBm/ 3.84 MHz	<i>Io -13.7 dB = loc,</i> Note 1	<i>Io -13.7 dB = loc,</i> Note 1		
Range 1:lo		-9470 (Band I, IV, VI) -9270 (Band II, V)	-9470 (Band I, IV, VI) -9270 (Band II, V)		
	dBm/3.84 MHz	<u>-9170 (Band III)</u>	<u>-9170 (Band III)</u>		
Range 2: Io		-9450 <u>(Band I, IV, VI)</u> -9250 (Band II, V) -9150 (Band III)	-9450 <u>(Band I, IV, VI)</u> -9250 (Band II, V) -9150 (Band III)		
Propagation condition	Propagation condition - AWGN				
NOTE 1: loc level shall be adjusted according the total signal power spectral density lo at receiver input and the					
geometry factor <i>lor/loc</i> .					

Table A.9.6: SFN-CFN observed time difference Intra frequency test parameters

A.9.1.4.1.2 Inter frequency test parameters

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

In this test case both cells are in different frequency and compressed mode is applied. The gap length is 7, detailed definition is in TS 25.101 annex A.5, Set 1 of Table A.22. Table A.9.7 defines the limits of signal strengths and code powers, where the requirement is applicable.

		1 ,	·
Parameter	Unit	Cell 1	Cell 2
RA RF Channel number		Channel 1	Channel 2
ICH_Ec/lor	dB	-10	-10

Table A.9.7: SFN-CFN	observed time	difference Inter	frequenc	v tests	parameters
			nequene	y 10010	purumeters

UTRA RF Channel number		Channel 1	Channel 2		
CPICH_Ec/lor	dB	-10	-10		
PCCPCH_Ec/lor	dB	-12	-12		
SCH_Ec/lor	dB	-12	-12		
PICH_Ec/lor	dB	-15	-15		
DPCH_Ec/lor	dB	-15	-15		
OCNS	dB	-1.11	-1.11		
Îor/loc	dB	10.1	10.1		
loc	dBm/ 3.84 MHz	<i>Io -10.6 dB = loc,</i> Note 1	<i>Io -10.6 dB = loc,</i> Note 1		
Range 1:lo		-9470 <u>(Band I, IV, VI)</u> -9270 (Band II, V) -9170 (Band III)	-9470 <u>(Band I, IV, VI)</u> -9270 (Band II, V) -9170 (Band III)		
	dBm/3.84 MHz				
Range 2: Io		-9450 (<u>Band I, IV, VI)</u> -9250 (<u>Band II, V)</u> -9150 (<u>Band III)</u>	-9450 <u>(Band I, IV, VI)</u> -9250 (Band II, V) -9150 (Band III)		
Propagation condition	-	AWGN			
NOTE 1: <i>loc</i> level shall be adjusted in each carrier frequency according the total signal power spectral density <i>lo</i> at receiver input and the geometry factor <i>lor/loc</i> .					

A.9.1.4.2 **Test Requirements**

The SFN-CFN observed time difference measurement accuracy shall meet the requirements in section 9.1.7.

A.9.1.5 SFN-SFN observed time difference

A.9.1.5.1 SFN-SFN observed time difference type 1

A.9.1.5.1.1 Test Purpose and Environment

The purpose of this test is to verify that the SFN-SFN observed time difference type 1 measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.8.1.

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

In this case all cells are in the same frequency. Table A.9.8 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table A.9.8: SFN-SFN observed time difference type 1 Intra frequency test parameters

Parameter	Unit	Cell 1	Cell 2		
UTRA RF Channel number		Channel 1	Channel 1		
CPICH Ec/lor	dB	-10	-10		
PCCPCH_Ec/lor	dB	-12	-12		
SCH_Ec/lor	dB	-12	-12		
PICH_Ec/lor	dB	-15	-15		
S-CCPCH_Ec/lor	dB	-12	-12		
OCNS	dB	-1.29	-1.29		
Îor/loc	dB	10.5	10.5		
loc	dBm/ 3.84 MHz	<i>Io -13.7 dB = loc,</i> Note 1	<i>Io -13.7 dB = loc,</i> Note 1		
Range 1:lo	dBm/3.84 MHz	-9470 (Band I, IV, VI) -9270 (Band II, V) -9170 (Band III) -9450 (Band I, IV, VI) -9250 (Band II, V) 01 - 50 (Band III)	-9470 (Band I, IV, VI) <u>-9270 (Band II, V)</u> <u>-9170 (Band II)</u> -9450 (Band I, IV, VI) <u>-9250 (Band II, V)</u> 0150 (Band III, V)		
Range 2: lo		<u>-9150 (Band III)</u>	<u>-9150 (Band III)</u>		
Propagation condition	Propagation condition - AWGN				
NOTE 1: <i>loc</i> level shall be adjusted according the total signal power spectral density <i>lo</i> at receiver input and the geometry factor <i>lor/loc</i> .					

A.9.1.5.1.2 Test Requirements

The SFN-SFN observed time difference type 1 measurement accuracy shall meet the requirements in section 9.1.8.1

A.9.1.5.2 SFN-SFN observed time difference type 2 without IPDL period active

A.9.1.5.2.1 Test Purpose and Environment

The purpose of this test is to verify that the SFN-SFN observed time difference type 2 measurement accuracy without IPDL period active is within the specified limits. This test will verify the requirements in section 9.1.8.2.

During the test the time difference between Cell 1 and 2 can be set to value from -1279.75 to 1280 chips.

In this case all cells are in the same frequency. Table A.9.9 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table A.9.9: SFN-SFN observed time difference type 2 Intra frequency test parameters

Parameter	Unit	Cell 1	Cell 2		
UTRA RF Channel number		Channel 1	Channel 1		
CPICH_Ec/lor	dB	-10	-10		
PCCPCH_Ec/lor	dB	-12	-12		
SCH_Ec/lor	dB	-12	-12		
PICH_Ec/lor	dB	-15	-15		
DPCH_Ec/lor	dB	-15	-15		
OCNS	dB	-1.11	-1.11		
Îor/loc	dB	10.5	10.5		
loc	dBm/ 3.84 MHz	<i>Io -13.7 dB = loc,</i> Note 1	<i>Io -13.7 dB = loc,</i> Note 1		
CPICH_Ec/lo, Note 2	dB	-13.2	-13.2		
Range 1:lo	dBm/3.84 MHz	-9470 <u>(Band I, IV, VI)</u> -9270 (Band II, V) -9170 (Band III)	-9470 (Band I, IV, VI) -9270 (Band II, V) -9170 (Band III)		
Range 2: Io		-9450 <u>(Band I, IV, VI)</u> - <u>9250 (Band II, V)</u> - <u>9150 (Band III)</u>	-9450 <u>(Band I, IV, VI)</u> <u>-9250 (Band II, V)</u> <u>-9150 (Band III)</u>		
Propagation condition	-	AWGN			
 NOTE 1: <i>loc</i> level shall be adjusted according the total signal power spectral density <i>lo</i> at receiver input and the geometry factor <i>îor/loc</i>. NOTE 2: Io and CPICH Ec/lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves 					

A.9.1.5.2.2 Test Requirements

The SFN-SFN observed time difference type 2 measurement accuracy shall meet the requirements in section 9.1.8.2

A.9.1.6 UE Rx-Tx time difference

A.9.1.6.1 UE Rx-Tx time difference type 1

A.9.1.6.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE Rx-Tx time difference type 1 measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.9.1

Table A.9.11 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table A.9.11: UE Rx-Tx time difference type 1 intra frequency test parameters

Parameter	Unit	Cell 1		
UTRA RF Channel number		Channel 1		
CPICH_Ec/lor	dB	-10		
PCCPCH_Ec/lor	dB	-12		
SCH_Ec/lor	dB	-12		
PICH_Ec/lor	dB	-15		
DPCH_Ec/lor	dB	-15		
OCNS	dB	-1.11		
Îor/loc	dB	10.5		
	dBm/3.84 MHz	Io - 10.9 dB = Ioc,		
	UDITI/ 3.04 IMITZ	Note 1		
		-9450 <u>(Band I, IV,</u>		
lo	dBm/3 84 MHz	<u>VI)</u>		
10		<u>-9250 (Band II, V)</u>		
		<u>-9150 (Band III)</u>		
Propagation condition	-	AWGN		
NOTE 1: <i>loc</i> level shall be adjusted according the total signal power spectral				
density <i>lo</i> at receiver input and the geometry factor <i>lor/loc</i> .				

A.9.1.6.1.2 Test Requirements

The UE Rx-Tx time difference type 1 measurement accuracy shall meet the requirements in section 9.1.9.1.

A.9.1.6.2 UE Rx-Tx time difference type 2

A.9.1.6.2.1 Test Purpose and Environment

The purpose of this test is to verify that the UE Rx-Tx time difference type 2 measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.9.2.

Table A.9.12 defines the limits of signal strengths and code powers, where the requirements are applicable.

Parameter	Unit	Cell 1	
UTRA RF Channel number		Channel 1	
CPICH_Ec/lor	dB	-10	
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
DPCH_Ec/lor	dB	-15	
OCNS	dB	-1.11	
Îor/loc	dB	10.5	
loc	dBm/ 3.84 MHz	lo -10.9 dB = loc, Note 1	
lo	dBm/ 3.84 MHz	-9450 (Band I, IV, VI) -9250 (Band II, V) -9150 (Band III)	
Propagation condition	-	AWGN	
NOTE 1: loc level shall be adjusted according the total signal power spectral density to at receiver input and the geometry factor lor/loc.			

Table A.9.12: UE Rx-Tx time difference type 2 intra frequency test parameters

A.9.1.6.2.2 Test Requirements

The UE Rx-Tx time difference type 2 measurement accuracy shall meet the requirements in section 9.1.9.2.

3GPP TSG RAN WG4 (Radio) Meeting #31

Beijing, China 10 - 14 May 2004

		CHAN	GE REQ	UES	Т	CR-Form-v7
ж	25.133	CR <mark>666</mark>	ж rev	1 [#]	Current vers	sion: <mark>5.10.0</mark> [#]
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the <i>X</i> symbols.						
Proposed change	affects:	JICC apps ೫ <mark>─</mark>	ME	Radio	Access Netwo	rk Core Network
Title: 9	f Removal	of square bracke	ets and other	correctio	ons to support	T1
Source:	<mark>€ RAN WG</mark>	4				
Work item code: ३	f <mark>TEI5</mark>				<i>Date:</i> ೫	24/05/2004
Category:	€ F Use <u>one</u> of F (cor A (cor B (add C (fun D (edi Detailed ex be found in	the following categ rection) responds to a corr dition of feature), ctional modification torial modification) planations of the al 3GPP <u>TR 21.900</u> .	ories: ection in an ea n of feature) pove categorie:	rlier relea s can	Release: # Use <u>one</u> of 2 ase) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	Rel-5 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)

Reason for change: ೫	The are still square brackets in Thotify in TFC selection requirements and in the corresponding test case.
	Notation of $T_{identify, intra}$ and $T_{identify_{intra}}$ is used interchangeably
	Notation of T _{identify, inter} and T _{identify_inter} is used interchangeably
	Notation of $T_{Measurement inter}$ and $T_{Measurement_inter}$ is used interchangeably
	The "<5 seconds" requirements in section "8.1.2.2.5 Event Triggered Reporting" was originally intended to be ≤5 seconds as in the test scenario in section "A.8.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition" (T3 in table A.8.3 is 5 seconds). Now there is discrepancy between the test case and the core requirement.
	Test scenarios in the section A.4.2 cover requirements in section 4.2.2.3 and 4.2.2.2 but a reference to 4.2.2.3 is missing.
	Some test scenarios specify power control on, but then specify a fixed DPCH_Ec/lor.
	In the test case in section A.8.1.4 it is not defined for which cell the event 1A should be triggered.
Summary of change: #	Correct section "5.5.2.1.1Intra frequency cell reselection" to use T _{identify, intra} notation
	Correct section "5.5.2.1.2 Inter frequency cell reselection" to use $T_{identify, intra}$ notation
	Correct section "5.5.2.1.2 Inter frequency cell reselection" to use T _{Measurement, inter}

	notation			
	The square brackets are removed from the Tnotify requirements in section 6.4.2 and in the corresponding test case.			
	Change <5 seconds in section "8.1.2.2.5 Event Triggered Reporting" to ≤5 seconds as originally intended.			
	Add reference to section 4.2.2.3 to description of test scenario in A.4.2			
	Correct DPCH_Ec/lor in table A.6.2, A.6.4, A.8.2, A.8.4, A.8.6, A.8.8, A.8.10			
	Clarification that the event 1As counted in the test in section A.8.1.4 is for the neighbour cell (cell 2) only.			
	Isolated Impact Analyses:			
	Most of the changes are corrections to the test case and therefore if a UE fulfils the core requirements, these changes should not affect the UE.			
	The change of <5 seconds to ≤5 seconds may potentially have a negative impact on terminal if the UE has not used the interpretation of the test case.			
	The removal of square brackets should not have an impact on a UE as the van have been unchanged for long time.			
0				
not approved:	incorrectly and therefore a UE fulfilling the requirements may not pass the tests.			
Clauses affected:	5.5.2.1.1, 5.2.2.1.2, 6.4.2, 8.1.2.2.5, A.4.2, A.6.1.1.1, A.6.1.1.2, A.6.4.2, A.8.1.1.1, A.8.1.2.1, A.8.1.3.1, A.8.1.4.1, A.8.1.4.2, A.8.2.1.1			
Other specs	YN f Other core specifications #			
affected:	X Test specifications 34.121 O&M Specifications 34.121			
Other comments:	ρ			
	Equivalent CRs in other Releases: CR667r1 cat. A to 25.133 v6.5.0			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

5.5.2.1.1 Intra frequency cell reselection

The cell re-selection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$\Gamma_{\text{reselection, intra}} = T_{\text{identify, intra}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} \text{ ms}$$

where

 $T_{identify,-intra}$ is specified in 8.4.2.2.1.

 T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

 T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell..

 T_{RA} = The additional delay caused by the random access procedure.

If a cell has been detectable at least $T_{identify,intra}$, the cell reselection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$T_{\text{reselection, intra}} = T_{\text{Measurement}_{\text{Period Intra}}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}}$$
 ms

where

```
T_{\text{Measurement}\_Period Intra} = Specified in 8.4.2.2.2.
```

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

5.5.2.1.2 Inter frequency cell reselection

The cell re-selection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

$$T_{\text{reselection, inter}} = T_{\text{identify, inter}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} \text{ ms}$$

.where

 $T_{identify_{\tau},inter}$ is specified in 8.4.2.3.1.

 T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

 T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell..

 T_{RA} = The additional delay caused by the random access procedure.

If a cell has been detectable at least $T_{identify,inter}$, the cell reselection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

$$\frac{T_{\text{reselection, inter}}}{T_{\text{reselection, inter}}} = \frac{T_{\text{Measurement inter}}}{T_{\text{IU}}} + \frac{T_{\text{IU}}}{20} + \frac{T_{\text{SI}}}{T_{\text{II}}} + \frac{T_{\text{RA}}}{T_{\text{RA}}} T_{\text{reselection, inter}} = T_{\text{Measurement, inter}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} m_{\text{RA}} m_{\text{RA}}$$

where

 $T_{\text{Measurement,-inter}} = \text{Specified in 8.4.2.3.2.}$

These requirements assume radio conditions to be sufficient, so that reading of system information can be done without errors.

6.4 Transport format combination selection in UE

6.4.1 Introduction

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format set, according to the functionality specified in section 11.4 in TS25.321. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321.

6.4.2 Requirements

The UE shall continuously evaluate based on the *Elimination, Recovery* and *Blocking* criteria defined below, how TFCs on an uplink DPDCH can be used for the purpose of TFC selection. The evaluation shall be performed for every TFC in the TFCS using the estimated UE transmit power. The UE transmit power estimation for a given TFC shall be made using the UE transmitted power measured over the measurement period, defined in 9.1.6.1 as one slot, and the gain factors of the corresponding TFC.

The UE shall consider the *Elimination* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC is greater than the Maximum UE transmitter power for at least X out of the last Y successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Elimination* criterion was detected.

The UE shall consider the *Recovery* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC has not been greater than the Maximum UE transmitter power for the last Z successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Recovery* criterion was detected.

The evaluation of the *Elimination* criterion and the *Recovery* criterion shall be performed at least once per radio frame.

The definitions of the parameters X,Y and Z which shall be used when evaluating the *Elimination* and the *Recovery* criteria when no compressed mode patterns are activated are given in Table 6.0.

Table 6.0: X, Y, Z	parameters for	TFC selection
--------------------	----------------	----------------------

X	Y	Z
15	30	30

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess-Power state for a duration of:

$$(T_{notify} + T_{modify} + T_{L1_proc})$$

where:

T_{notify} equals [15] ms, and

 T_{modify} equals MAX(T_{adapt_max}, T_{TTI}), and

 $T_{L1 proc}$ equals 15 ms, and

 T_{adapt_max} equals MAX(T_{adapt_1} , T_{adapt_2} , ..., T_{adapt_N}), and

N equals the number of logical channels that need to change rate, and

 T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms. For services where either UMTS_AMR2 or UMTS_AMR_WB is used, Tadapt shall be considered to be equal to the time required to switch from the current codec mode to a new supported codec mode. In that case Tadapt equals 20 ms + 40 ms per codec mode switch. E.g. Tadapt equals 60ms if one codec mode switch is necessary and Tadapt equals 140ms if 3 codec mode switches are necessary.

 T_{TTI} equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

Maximum UE transmitter power = MIN(Maximum allowed UL TX Power, UE maximum transmit power)

where

Maximum allowed UL TX Power is set by UTRAN and defined in [16], and

UE maximum transmit power is defined by the UE power class, and specified in [3].

6.5 Maximum allowed UL TX Power

UTRAN may limit the power the UE is using on the uplink by setting the maximum allowed UL TX power IE defined in TS25.331.

For each measurement period, the UE shall with the use of the UE transmitted power measurement, estimate if it has reached the Maximum allowed UL TX Power or not. With tolerances as defined for the UE transmitted power measurement accuracy (section 9.1.6.1), the UE output power shall not exceed the Maximum allowed UL TX Power, as set by the UTRAN.

For UE output powers that are outside the range covered by the UE transmitted power measurement the UE output power shall not exceed the Maximum allowed UL TX Power with more than the tolerances specified for the Open loop power control in TS 25.101 section 6.4.1.

8.1.2.2.5 Event Triggered Reporting

Reported measurements contained in event triggered measurement reports shall meet the requirements in section 9.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined T $_{identify intra}$, defined in Section 8.1.2.2.1

If a cell, belonging to monitored set, which the UE has identified and measured at least once over the measurement period, becomes undetectable for a period ≤ 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than $T_{Measurement_Period Intra}$ ms provided the timing to that cell has not changed more than +/-32 chips, the UE CPICH measurement capabilities of section 8.1.2.2.2 are valid and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{identify_intra}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement_Period Intra}$ when the L3 filter has not been used and the UE CPICH measurement capabilities of Section 8.1.2.2.2 are valid.

The event triggered measurement reporting delay on cells not belonging to monitored set, measured without L3 filtering, shall be less than the above defined T _{identify detected set} defined in Section 8.1.2.2.1.

8.1.2.3 FDD inter frequency measurements

In the CELL_DCH state when a transmission gap pattern sequence with the "FDD measurements" purpose is provided by the network the UE shall continuously measure identified inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

In order for the requirements in the following subsections to apply the UTRAN must provide a transmission gap pattern sequence with measurement purpose FDD measurement using the following combinations for TGL1, TGL2, TGD and Max TGPL:

TGL1 [slots]	TGL2 [slots]	TGD [slots]	Max TGPL [frames]
7	-	undefined	18
14	-	undefined	36
10	-	undefined	24
7	7	15269	18 + ceil(TGD/15)
14	14	45269	36 + ceil(TGD/15)

Table 8.1

A.4 Idle Mode

A.4.1 Cell selection

(void)

A.4.2 Cell Re-Selection

Two scenarios are considered:

- Scenario 1: Single carrier case
- Scenario 2: Multi carrier case

For each of them a test is proposed.

NOTE: Existing scenarios cover only requirements in section 4.2.2.2 and 4.2.2.3. More scenarios, covering requirements in section 4.2.2.1, will be added later.

A.4.2.1 Scenario 1: Single carrier case

A.6 RRC Connection Control

A.6.1 RRC Re-establishment delay

A.6.1.1 Test Purpose and Environment

The purpose is to verify that the RRC re-establishment delay is within the specified limits. These tests will verify the requirements in section 6.1.2.

A.6.1.1.1 TEST 1

The test parameters are given in table A.6.1 and table A.6.2 below. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consist of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Parameter	Unit	Value	Comment
DCH Parameters		DL Reference	As specified in TS 25.101, section A.3.1
		measurement	
		channel 12.2 kbps	
Power Control		On	
Active cell, initial condition		Cell 1	
Active cell, final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
T _{SI}	ms	1280	Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). Note: Since 1280 ms is one of the typical values for repeating system information blocks, T_{SI} of 1280 ms could be increased by the RRC procedure delay in order to allow the SIB repetition period of 1280 ms.
Monitored cell list size		24	Monitored set shall only include intra frequency neighbours.
Cell 2			Included in the monitored set.
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

Table A.6.1 General test parameters for RRC re-establishment delay, Test 1

Parameter	Unit	Cell 1		Ce	ll 2
		T1	T2	T1	T2
Cell Frequency	ChNr	1		1	1
CPICH_Ec/lor	dB	-1	0	-10	
PCCPCH_Ec/lor	dB	-1	2	-1	2
SCH_Ec/lor	dB	-1	2	-1	2
PICH_Ec/lor	dB	-1	5	-1	5
DCH_Ec/lor	dB	<u>Note 1-17</u>	-Infinity	Not app	olicable
OCNS_Ec/lor	dB	<u>Note 2-1.049</u>	-0.941	-0.9	941
\hat{I}_{or}/I_{oc}	dB	2,39	-Infinity	4,39	0,02
I _{oc}	dBm/ 3.84 MHz		-	70	
CPICH_Ec/lo	dB	-15	-Infinity	-1	3
Propagation Condition		AWGN			
Note 1: The DPCH level is controlled by the power control loop					

Table A.6.2 Cell specific parameters for RRC re-establishment delay test, Test 1

A.6.1.1.2 TEST 2

The test parameters are given in table A.6.3 and table A.6.4 below. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

RC re-establishment delay, Test 2

Parameter	Unit	Value	Comment
DCH Parameters		DL Reference measurement channel 12.2 kbps	As specified in TS 25.101, section A.3.1
Power Control		On	
Active cell, initial condition		Cell 1	
Active cell, final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
Τ _{SI}	ms	1280	Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). Note: Since 1280 ms is one of the typical values for repeating system information blocks, T_{SI} of 1280 ms could be increased by the RRC procedure delay in order to allow the SIB repetition period of 1280 ms.
Monitored cell list size		24	Monitored set shall include 2 additional frequencies.
Cell 2			Cell 2 is not included in the monitored set. Cell 2 is located on one of the 2 additional frequencies of the monitored set.
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

Table A.6.4 Cell specific parameters for RRC re-establishment delay test, Test 2

Parameter	Unit	Cell 1		Cel	12	
		T1	T2	T1	T2	
Cell Frequency	ChNr		1	2)	
CPICH_Ec/lor	dB	-1	0	-10		
PCCPCH_Ec/lor	dB	-1	2	-12		
SCH_Ec/lor	dB	-1	2	-1	2	
PICH_Ec/lor	dB	-1	5	-1	5	
DCH_Ec/lor	dB	<u>Note 1-17</u>	-Infinity	Not app	ot applicable	
OCNS_Ec/lor	dB	<u>Note 2-1.049</u>	-0.941	-0.9	941	
\hat{I}_{or}/I_{oc}	dB	-3,35	-Infinity	-Infinity	0,02	
I _{oc}	dBm/ 3.84			-70		
60	MHz					
CPICH_Ec/lo	dB	-15	-Infinity	-Infinity	-13	
Propagation Condition	AWGN					
Note 1: The DPCH level is controlled by the power control loop						
Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to						
or						

A.6.1.2 Test Requirements

A.6.1.2.1 Test 1

The Re-establishment delay T_{RE-ESTABLISH} to a known cell shall be less than 1.9s.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

 $T_{\text{RE-ESTABLISH}} = T_{\text{RRC-RE-ESTABLISH}} + T_{\text{UE-RE-ESTABLISH-REQ-KNOWN}}.$

where

T_{RRC-RE-ESTABLISH}=160ms+(N₃₁₃-1)*10ms+T₃₁₃

 $T_{UE-RE-ESTABLISH_REQ-KNOWN} = 50ms + T_{search} + T_{SI} + T_{RA}$

N₃₁₃=20

T₃₁₃=0s

T_{search}=100ms

 T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

 T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 1820ms, allow 1.9s in the test case.

A.6.1.2.2 Test 2

The Re-establishment delay to an unknown cell shall be less than 4.2s.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

 $T_{\text{RE-ESTABLISH}} = T_{\text{RRC-RE-ESTABLISH}} + T_{\text{UE-RE-ESTABLISH-REQ-UNKNOWN}}.$

where

 $T_{RRC-RE-ESTABLISH} = 160ms + (N_{313}-1)*10ms + T_{313}$

 $T_{\text{UE-RE-ESTABLISH-REQ-UNKNOWN}} = 50 \text{ms} + T_{\text{search}} * \text{NF} + T_{SI} + T_{\text{RA}},$

N₃₁₃=20

T₃₁₃=0s

T_{search}=800ms

NF is the number of different frequencies in the monitored set. 3 frequencies are assumed in this test case.

 T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

 T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms).1280 ms is assumed in this test case.

This gives a total of 4120ms, allow 4.2s in the test case.

A.6.4 Transport format combination selection in UE

A.6.4.1 Test Purpose and Environment

The purpose is to verify the UE blocks (stops using) a currently used TFC when the UE output power is not sufficient to support that TFC. This test will verify the general requirement on TFC selection in section 6.4.

A.6.4.1.1 Interactive or Background, PS, UL: 64 kbps

The test will verify the general requirement on TFC selection in section 6.4 for a RAB intended for packet data services, i.e. Interactive or Background, PS, UL: 64kbps as defined in TS 34.108.

The test parameters are given in Table A.6.8, A.6.9 and Table A.6.10 below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

Details on the UL reference RAB in table A.6.8 and A.6.9 can be found in TS 34.108 section "Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH".

Table A.6.8: UL reference RAB, Interactive or Background

	TFI	64 kbps RAB (20ms TTI)	DCCH 3.4kbps (40ms TTI)
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

TFCI	(64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF0, TF1)
UL_TFC2	(TF1, TF0)
UL_TFC3	(TF1, TF1)
UL_TFC4	(TF2, TF0)
UL_TFC5	(TF2, TF1)
UL_TFC6	(TF3, TF0)
UL_TFC7	(TF3, TF1)
UL_TFC8	(TF4, TF0)
UL_TFC9	(TF4, TF1)

Table A.6.9: UL TFCI

Table A.6.10: General test parameters

Parameter	Unit	Value	Comment
TFCS size		10	
TFCS		UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC8, UL_TFC9	
Power Control		On	
Active cell		Cell 1	
Maximum allowed UL TX power	dBm	21	
T1	S	30	
T2	S	10	
Propagation condition		AWGN	

The radio conditions in the test shall be sufficient, so that decoding of the TPC commands can be made without errors.

The amount of available user data shall be sufficient to allow uplink transmission at the highest bit rate (UL_TFC8 or UL_TFC9) during the entire test and it shall be ensured that the UE is using UL_TFC8 or UL_TFC9 at the end of T1.

The test shall be performed in the following way:

Before time period T1:

The allowed TFCS according to table A.6.10 shall be signalled to the UE.

During time period T1:

The system simulator shall ensure that the UE output power is commanded to be between 14 to 15 dB below the UE Maximum allowed UL TX power.

During time period T2:

The system simulator shall continously send TPC_cmd=1 to the UE from the beginning of T2 until the end of T2.

NOTE: This will emulate that UL_TFC8 to UL_TFC9 can not be supported beacuse the UE reaches the maximum UL Tx power and still UTRAN is sending power-up commands. The time from the beginning of T2 until the UE blocks (stops using) UL_TFC8 and UL_TFC9 shall be measured.

A.6.4.2 Test Requirements

A.6.4.2.1 Interactive or Background, PS, UL: 64 kbps

The UE shall have stopped using UL_TFC8 and UL_TFC9 within 140 ms from beginning of time period T2.

The rate of correct tests observed during repeated tests shall be at least 90%.

NOTE: The delay from the begining of T2 can be expressed as:

$$T_{ramp} + T_{detect_block} + T_{notify} + T_{modify} + T_{L1_proc} + T_{align_TTI}$$

where:

T _{ramp}	Margin added for the increase of UE output power to the UE maximum power. A margin of 1 frame (10ms) is used, i.e. 15 TPC commands.
T_{detect_block}	The time needed to detect that UL_TFC8 and UL_TFC9 can no longer be supported, i.e. defines the maximum time to detect that the <i>Elimination</i> criterion is fulfilled for UL_TFC8 and UL_TFC9. According to X and Y values of 15 and 30 as defined in Section 6.4.2 and by assuming the maximum misalignment between the frame boundary, where the evaluation of the <i>Elimination</i> criterion is performed and the last slot needed for triggering the <i>Elimination</i> criterion on L1, T_{detect_block} becomes 15 slots +14 slots =19.33 ms.
T _{notify}	Equal to [15] ms, the time allowed for MAC to indicate to higher layers that UL_TFC8 and UL_TFC9 can no longer be supported.
T_{modify}	Equal to MAX(T_{adapt_max} , T_{TTI}) = MAX(0, 40)=40ms
T_{adapt_max}	Equals to 0ms for the case without codec.
T_{L1_proc}	Equals 15ms.
T_{align_TTI}	Align with the longest uplink TTI where the new TFC can be selected. The worst case equals 40ms in this test case.
T _{TTI}	See section 6.4.2. Equals 40 ms in the test case.

This gives a maximum delay of $(10 + 19.33 + \frac{15}{1} + 40 + 15 + 40)$ ms= 139.33 ms from the beginning of T2, allow 140 ms in the test case.

A.8 UE Measurements Procedures

A.8.1 FDD intra frequency measurements

A.8.1.1 Event triggered reporting in AWGN propagation conditions

A.8.1.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event. This test will partly verify the requirements in section 8.1.2 and 9.1.

The test parameters are given in Table A.8.1 and A.8.2 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. During time duration T1, the UE shall not have any timing information of cell 2.

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement	As specified in TS 25.101 section A.3.1
		Channel 12.2 kbps	
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation		0	Applicable for event 1A
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24	
T1	S	5	
T2	S	5	
Т3	S	5	

Table A.8.1: General test parameters for Event triggered reporting in AWGN propagation conditions

Table A.8.2: Cell specific test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit		Cell 1			Cell 2					
		T1	T2	Т3	T1	T1 T2 T3					
CPICH_Ec/lor	dB		-10	•		-10					
PCCPCH_Ec/lor	dB		-12			-12					
SCH_Ec/lor	dB		-12			-12					
PICH_Ec/lor	dB		-15			-15					
DPCH_Ec/lor	dB		<u>Note 1-17</u>	<u>z</u>		N/A					
OCNS			<u>Note 2-1.04</u>	19		-0.941					
\hat{I}_{or}/I_{oc}	dB	0	6.97	0	-Infinity	5.97	-Infinity				
I _{oc}	dBm/3.84 MHz	-70									
CPICH_Ec/lo	dB	-13	-13	-13	-Infinity	-14	-Infinity				
Propagation		AWGN									
Condition											
Note 1: The DPCH level is controlled by the power control loop											
Note 2 : The power	Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lo										

A.8.1.1.2 Test Requirements

The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 800 ms from the beginning of time period T2.

The UE shall send one Event 1B triggered measurement report, with a measurement reporting delay less than 200 ms from the beginning of time period T3.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

NOTE: The actual overall delays measured in the test may be up to 2 x TTI_{UL DCCH} higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in the UL DCCH.

A.8.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition

A.8.1.2.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of events. This test will partly verify the requirements in section 8.1.2 and 9.1.

The test parameters are given in Table A.8.3 and A.8.4. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A, 1C and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table A.8.3: General test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in TS 25.101 section A.3.1
		12.2 kbps	
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Replacement		0	Applicable for event 1C
activation threshold			
Reporting		0	Applicable for event 1A
deactivation			
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list		32	
size			
T1	S	10	
T2	S	10	
T3	S	5	
T4	S	10	

Table A.8.4: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit		Ce	1			Ce	ll 2		Cell3				
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	
CPICH_Ec/lor	dB		-1	0			-1	0		-10				
PCCPCH_Ec/ lor	dB	-12				-12			-12					
SCH_Ec/lor	dB	-12				-12			-12					
PICH_Ec/lor	dB	-15				-1	5		-15					
DPCH_Ec/lor	dB	Note 1-17					N	N/A			N/A			
OCNS_Ec/lor	dB		Note 2	-1.049			-0.941			-0.941				
\hat{I}_{or}/I_{oc}	dB	6.97	6.93	5.97	6.12	-Inf	9.43	6.97	7.62	5.97	6.93	-Inf	5.62	
I _{oc}	dBm/ 3.84 MHz						-8	35						
CPICH_Ec/lo	dB	-13	-16	-14	-15.5	-Inf	-13.5	-13	-14	-14	-16	-Inf	-16	
Propagation Condition			AWGN											
Note 1: The D	PCH lev	el is con	trolled b	y the po	wer cont	trol loop								
Note 2 : The por	Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to lat													

A.8.1.2.2 Test Requirements

- a) The UE shall send one Event 1A triggered measurement report for Cell3, with a measurement reporting delay less than 800 ms from the beginning of time period T1.
- b) The UE may send one Event 1C triggered measurement report for Cell3 after the beginning of the time period T1.
- c) The UE shall send one Event 1C triggered measurement report for Cell2, with a measurement reporting delay less than 800 ms from the beginning of time period T2.
- d) The UE shall send one Event 1A triggered measurement report for Cell2, with a measurement reporting delay less than 800 ms from the beginning of time period T2.
- e) The UE shall send one Event 1B triggered measurement report for Cell3, with a measurement reporting delay less than 200 ms from the beginning of time period T3.
- f) The UE shall send one Event 1A triggered measurement report for Cell3, with a measurement reporting delay less than 200 ms from the beginning of time period T4.
- g) The UE may send one Event 1C triggered measurement report for Cell2 after the beginning of the time period T4.
- h) The UE may send one Event 1C triggered measurement report for Cell3 after the beginning of the time period T4.
- i) The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

NOTE: The actual overall delays measured in the test may be up to 2 x TTI_{UL DCCH} higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in the UL DCCH.

A.8.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition

A.8.1.3.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of events. This test will partly verify the requirements in section 8.1.2 and 9.1.

The test parameters are given in Table A.8.5 and A.8.6. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table A.8.5: General test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement	As specified in TS 25.101 section A.3.1
		Channel 12.2 kbps	
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation		0	Applicable for event 1A
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		32	
T1	S	10	
T2	S	10	
T3	S	10	
T4	S	10	

Table A.8.6: Cell specific test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit		Ce	ll 1			Ce	ll 2			Cell3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	
CPICH_Ec/lor	dB		-'	10			-10				-10			
PCCPCH_Ec/ lor	dB		-1	12			-12			-12				
SCH_Ec/lor	dB	-12					-12			-12				
PICH_Ec/lor	dB	-15					-1	15		-15				
DPCH_Ec/lor	dB	-17Note 1					N/A				N/A			
OCNS_Ec/lor	dB		-1.049	Note 2			-0.941				-0.941			
\hat{I}_{or}/I_{oc}	dB	14.55	28.51	14.45	28.51	-Inf	27.51	13.95	21.51	8.05	21.51	13.95	27.51	
I _{oc}	dBm/ 3.84 MHz						-8	35						
CPICH_Ec/lo	dB	-11	-13	-14.5	-13	-Inf	-14.0	-15	-20	-17.5	-20	-15	-14	
Propagation Condition							AWGN							
Note 1: The	DPCH le	vel is co	ntrolled	by the p	ower col	ntrol loo	<u>p</u> ka tha ta	tal now	r from t			al to I		

A.8.1.3.2 Test Requirements

- a) The UE shall send one Event 1A triggered measurement report for Cell2, with a measurement reporting delay less than 800 ms from the beginning of time period T2.
- b) The UE shall send one Event 1A triggered measurement report for Cell3, with a measurement reporting delay less than 200 ms from the beginning of time period T3.
- c) The UE shall send one Event 1B triggered measurement report for Cell2, with a measurement reporting delay less than 200 ms from the beginning of time period T4.
- d) The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

NOTE: The actual overall delays measured in the test may be up to $2 \times TTI_{UL DCCH}$ higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in the UL DCCH.

A.8.1.4 Correct reporting of neighbours in fading propagation condition

A.8.1.4.1 Test Purpose and Environment

The purpose of this test is to verify that the UE performs sufficient layer 1 filtering of the measurements, see section 9.1, which are the base for the event evaluation. The test is performed in fading propagation conditions. This test will partly verify the requirements in section 8.1.2.

The test parameters are given in Table A.8.7 and A.8.8.In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and Event 1B shall be used. The test consists of two successive time periods, each with a time duration of T1 and T2 respectively.

The TTI of the uplink DCCH shall be 20ms.

Table A.8.7: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	0	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	120	
Filter coefficient		0	
Monitored cell list size		24	Signalled before time T1.
T1	S	200	
T2	S	201	

Table A.8.8: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Ce	II 1	Cell 2				
		T1	T2	T1	T2			
CPICH_Ec/lor	dB	-10		-10				
PCCPCH_Ec/lor	dB	-12		-12				
SCH_Ec/lor	dB	-12		-12				
PICH_Ec/lor	dB	-15		-15				
DPCH_Ec/lor	dB	-17Note 1		N/A				
OCNS		-1.049 <u>Note 2</u>		-0.941				
\hat{I}_{or}/I_{oc}	dB	7.29 3.29		3.29 7.29				
I _{oc}	dBm/3.84 MHz	-70						
CPICH_Ec/lo	dB	-12	-16	-16	-12			
Propagation Condition	Propagation Condition Case 5 as specified in Annex B of TS25.101							
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or} .								

A.8.1.4.2 Test Requirements

a) The number of received event 1A reports <u>for cell 2</u> during time period T1 shall be less than 60.

- b) During the first 1 s of time period T2 no event reports shall be counted.
- c) The number of received event 1B reports counted from 1s after the beginning of time period T2 until the end of time period T2 shall be less than 60.

A.8.1.5 Event triggered reporting of multiple neighbour cells in Case 1 fading condition

A.8.1.5.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event in Case1 fading propagation condition. This test will partly verify the requirements in section 8.1.2.

The test parameters are given in Table A.8.8A and A.8.8B below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A shall be used and "CFN-SFN-Observed Time Difference" shall be reported. The test consists of two successive time periods, with time duration of T1 and T2, respectively. During time duration T1, the UE shall not have any timing information of invisible cells.

Table A.8.8A: General test parameters for event triggered reporting in multi-cell pedestrian environment

DCH parameters	Unit	DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Active cells		Cell2, Cell3, Cell4	
Hysteresis	dB	0	Applicable for event 1A
Time to Trigger	ms	0	Applicable for event 1A
Filter coefficient		0	Applicable for event 1A
Reporting range R _{1a}	dB	9	Applicable for event 1A
W		0	Applicable for event 1A
TriggeringCondition		activeSetAndMonitoredSetCells	Applicable for event 1A
Monitored cell list size		32	
T1	S	5	
T2	S	5	

Table 8.8B: Cell specific test parameters for event triggered reporting in multi-cell pedestrian environment

Parameter	Unit	Ce	11	Ce	ll 2	Ce	II 3	Cell 4	
		T1 T2		T1	T2	T1	T2	T1	T2
UTRA RF Channel		Chan	nol 1	Channel 1 Char			nel 1 Channel 1		
Number		Chan					Tiel i Channel i		
CPICH_Ec/lor	dB	-1	0	-*	10	-*	10	-1	10
PCCPCH_Ec/lor	dB	-1	2	-*	12	-*	12	-1	2
SCH_Ec/lor	dB	-1	2	-*	12	-*	12	-1	2
PICH_Ec/lor	dB	-1	5	-'	15	-'	15	-1	15
DPCH_Ec/lor	dB	n.a	a.	Not	te 1	Not	te 1	Not	e 1
OCNS_Ec/lor	dB	-0.9	941	Not	te 2	Not	te 2	Not	e 2
\hat{I}_{or}/I_{oc}	dB	-8	1.3	4.3	1.3	4.3	1.3	1.3	4.3
I _{oc}	dBm/3.84 MHz				-	70			
Propagation					Case 1	(3km/h)			
Condition					Case i				
CPICH_Ec/lo	dB	-∞	-17.6	-14.6	-17.6	-14.6	-17.6	-17.6	-14.6
SCH Ê		-∞	-20.0	-17.0	-20.0	-17.0	-20.0	-20.0	-17.0
$\underline{DCH} = \underline{L}_{c,maxpath}$	dB								
I_o									
NOTE 1: The DPCH	level is contr	olled by	the pow	er contr	ol loop.				
NOTE 2: The power	of the OCNS	the OCNS channel that is added shall make the total power equal to $I_{\rm or}$.							
NOTE 3: CPICH_EC	CPICH_Ec/lo and SCH_Ec_maxpath/lo levels have been calculated from other								
parameters	for informati	on purpo	ses. The	ey are r	ot setta	able ther	nselves		

A.8.1.5.2 Test Requirements

The UE shall send one Event 1A triggered measurement report for Cell 1 with a measurement reporting delay less than 800 ms from the beginning of time period T2.

The rate of correct events observed during repeated tests shall be at least 90%.

NOTE: The actual overall delays measured in the test may be up to 2 x TTI_{UL DCCH} higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in the UL DCCH.

A.8.1.6 Event triggered reporting of multiple neighbour cells in Case 3 fading condition

A.8.1.6.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event in Case3 fading propagation condition. This test will partly verify the requirements in section 8.1.2.

The test parameters are given in Table A.8.8C and A.8.8D below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1F shall be used and "CFN-SFN-Observed Time Difference" shall be reported. The test consists of two successive time periods, with time duration of T1 and T2 respectively. During time duration T1, the UE shall not have any timing information of invisible cells.

Table A.8.8C: General test parameters for event triggered reporting in multi-cell vehicular environment

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement	As specified in TS 25.101
		Channel 12.2 kbps	section A.3.1
Power Control		On	
Active cells		Cell2, Cell3, Cell4	
Hysteresis	dB	0	Applicable for event 1A
Time to Trigger	ms	0	Applicable for event 1A
Filter coefficient		0	Applicable for event 1A and
			event 1F
Reporting range R _{1a}	dB	8	Applicable for event 1A
W		0	Applicable for event 1A
TriggeringCondition		activeSetAndMonitoredSetCells	Applicable for event 1A
Absolute threshold T_{1f}	dB	-20	Applicable for event 1F
Time to Trigger	ms	0	Applicable for event 1F
TriggeringCondition		activeSet	Applicable for event 1F
Monitored cell list size		32	
T1	S	5	
T2	S	5	

Table 8.8D: Cell specific test parameters for event triggered reporting in multi-cell vehicular environment

Parameter	Unit	Ce	ell 1	Cell 2		Ce	II 3	Ce	II 4
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Char	nnel 1	Chan	nel 1	Channel 1		Channel 1	
CPICH_Ec/lor	dB	-	10	-1	0	-10		-10	
PCCPCH_Ec/lor	dB	-	12	-1	2	-1	12	-'	12
SCH_Ec/lor	dB	-{	9.3	-9.	3	-9	.3	-9	.3
PICH_Ec/lor	dB	-	15	-1	5	-1	15	-'	15
DPCH_Ec/lor	dB	n	.a.	Not	e 1	Not	e 1	Not	te 1
OCNS_Ec/lor	dB	No	te 2	Not	e 2	Not	e 2	Not	te 2
\hat{I}_{or}/I_{oc}	dB	-8	1.1	3.6	4.6	3.6	4.6	6.6	-∞
I _{oc}	dBm/3.84 MHz	-70							
Propagation Condition		Case 3 (120km/h)							
CPICH_Ec/lo	dB	-∞	-18.0	-16.5	-14.5	-16.5	-14.5	-13.5	-∞
$\frac{SCH_\hat{E}_{c,\text{maxpath}}}{I_o}$	dB	-∞	-20.0	-18.5	-16.5	18.5	-16.5	-15.5	-00
NOTE 1:The DPCH level is controlled by the power control loop.NOTE 2:The power of the OCNS channel that is added shall make the total power equal to I_{or} .NOTE 3:CPICH_Ec/Io, SCH_Ec_maxpath/Io, and I_o levels have been calculated from other									
parameters	parameters for information purposes. They are not settable themselves.								

A.8.1.6.2 Test Requirements

The UE shall send an Event 1A triggered measurement report for Cell 1, with a measurement reporting delay less than 800 ms from the beginning of time period T2. The UE shall send an Event 1F triggered measurement report for Cell 4, with a measurement reporting delay less than 200 ms from the beginning of time period T2.

The rate of correct events 1A for Cell1 observed during repeated tests shall be at least 90%.

NOTE: The actual overall delays measured in the test may be up to 2 x TTI_{UL DCCH} higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in the UL DCCH.

A.8.2 FDD inter frequency measurements

A.8.2.1 Correct reporting of neighbours in AWGN propagation condition

A.8.2.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.1.2.2 and section 8.1.2.3.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.8.9 and A.8.10 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in TS 25.101 section A.3.1
		12.2 kbps	
Power Control		On	
Compressed mode		A.22 set 1	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Threshold non used	dB	-18	Absolute Ec/I0 threshold for event 2C
frequency			
Reporting range	dB	4	Applicable for event 1A
Hysteresis	dB	0	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation		0	Applicable for event 1A
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1	Measurement control information is
		16 on channel 2	sent before the compressed mode
			pattern starts.
T1	S	10	
T2	S	5	

Table A.8.9: General test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2	
CPICH_Ec/lor	dB	-10		-10		-10	
PCCPCH_Ec/lor	dB	-12		-12		-12	
SCH_Ec/lor	dB	-12		-12		-12	
PICH_Ec/lor	dB	-15		-15		-15	
DPCH_Ec/lor	dB	-17Note 1	1	N/A		N/A	
OCNS		<u>-1.049No</u>	<u>te 2</u>	-0.941		-0.941	
\hat{I}_{or}/I_{oc}	dB	0	5.42	-Infinity	3.92	-1.8	-1.8
I _{oc}	dBm/3.84 MHz	-70		-		-70	
CPICH_Ec/lo	dB	-13	-13	-Infinity	-14.5	-14	-14
Propagation Condition	AWGN						
Note 1: The DPCH level is controlled by the power control loop							
Note 2 : The power	Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to						
be equal to I _{or}							

TableA.8.10: Cell Specific parameters for Correct reporting of neighbours in AWGN propagation condition

A.8.2.1.2 Test Requirements

- a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 9 seconds from the beginning of time period T1.
- b) The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 956.2 ms from the beginning of time period T2. The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

NOTE: The actual overall delays measured in the test may be up to 2 x TTI_{UL DCCH} higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in the UL DCCH.

3GPP TSG RAN WG4 (Radio) Meeting #31

Beijing, China 10 - 14 May 2004

		CHANG	E RE	QUE	EST			CR-Form-v7
ж	25.133	CR <mark>667</mark>	ж re \	/ 1	Ħ	Current vers	^{ion:} 6.5.0	ж
For <u>HELP</u> on u	sing this for	rm, see bottom of t	this page	or look	at th	e pop-up text	over the 🛱 syl	nbols.
Proposed change	Proposed change affects: UICC apps# ME X Radio Access Network Core Network							
<i>Title:</i> ೫	Removal	of square brackets	s and othe	er corre	ection	s to support T	1	
Source: #	RAN WG	4						
Work item code: #	TEI5					Date: ೫	24/05/2004	
Category: अ	A Use <u>one</u> of <i>F</i> (con A (cor B (add C (fun D (edi Detailed exp be found in	the following catego rection) responds to a correc lition of feature), ctional modification torial modification) planations of the abo 3GPP <u>TR 21.900</u> .	ries: ction in an of feature) ove catego	<i>earlier r</i> ries can	release	Release: ¥ Use <u>one</u> of 2 e) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	Rel-6 the following rel (GSM Phase 2) (Release 1996) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)	eases:
						Rel-6	(Release 6)	

Reason for change: ೫	The are still square brackets in Thotify in TFC selection requirements and in the corresponding test case.
	Notation of $T_{identify, intra}$ and $T_{identify_{intra}}$ is used interchangeably.
	Notation of T _{identify, inter} and T _{identify_inter} is used interchangeably.
	Notation of $T_{Measurement inter}$ and $T_{Measurement_inter}$ is used interchangeably
	The "<5 seconds" requirements in section "8.1.2.2.5 Event Triggered Reporting" was originally intended to be ≤5 seconds as in the test scenario in section "A.8.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition" (T3 in table A.8.3 is 5 seconds). Now there is discrepancy between the test case and the core requirement.
	Test scenarios in the section A.4.2 cover requirements in section 4.2.2.3 and 4.2.2.2 but a reference to 4.2.2.3 is missing.
	Some test scenarios specify power control on, but then specify a fixed DPCH_Ec/lor.
	In the test case in section A.8.1.4 it is not defined for which cell the event 1A should be triggered.
Summary of change: #	Correct section "5.5.2.1.1Intra frequency cell reselection" to use T _{identify, intra} notation
	Correct section "5.5.2.1.2 Inter frequency cell reselection" to use $T_{identify, intra}$ notation
	Correct section "5.5.2.1.2 Inter frequency cell reselection" to use T _{Measurement, inter}

	notation
	The square brackets are removed from the Tnotify requirements in section 6.4.2 and in the corresponding test case.
	Change <5 seconds in section "8.1.2.2.5 Event Triggered Reporting" to ≤5 seconds as originally intended.
	Add reference to section 4.2.2.3 to description of test scenario in A.4.2
	Correct DPCH_Ec/lor in table A.6.2, A.6.4, A.8.2, A.8.4, A.8.6, A.8.8, A.8,10
	Clarification that the event 1As counted in the test in section A.8.1.4 is for the neighbour cell (cell 2) only.
	Isolated Impact Analyses:
	Most of the changes are corrections to the test case and therefore if a UE fulfils the core requirements, these changes should not affect the UE.
	The change of <5 seconds to ≤5 seconds may potentially have a negative impact on terminal if the UE has not used the interpretation of the test case.
	The removal of square brackets should not have an impact on a UE as the values have been unchanged for long time.
not approved:	incorrectly and therefore a UE fulfilling the requirements may not pass the tests.
Clauses affected:	器 5.5.2.1.1, 5.2.2.1.2, 6.4.2, 8.1.2.2.5, A.4.2, A.6.1.1.1, A.6.1.1.2, A.6.4.2, A.8.1.1.1, A.8.1.2.1, A.8.1.3.1, A.8.1.4.1, A.8.1.4.2, A.8.2.1.1
Other space	YN W Other core specifications %
affected:	X Test specifications 34.121 O&M Specifications 34.121
Other comments:	Equivalent CRs in other Releases: CR666r1 cat. F to 25.133 v5.10.0

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

5.5 Cell Re-selection in CELL_FACH

5.5.1 Introduction

The UE shall evaluate the cell re-selection criteria specified in TS 25.304, based on radio measurements, and if a better cell is found that cell is selected.

5.5.2 Requirements

The Cell reselection delays specified below are applicable when the RRC parameter $T_{reselection}$ is set to 0. Otherwise the Cell reselection delay is increased $T_{reselection}$ s.

The measurements CPICH Ec/Io and CPICH RSCP shall be used for cell reselection in Cell-FACH state to another FDD cell, P-CCPCH RSCP shall be used for cell re-selection to a TDD cell and GSM carrier RSSI shall be used for cell re-selection to a GSM cell. The accuracies of the measurements used for a cell-reselection in an AWGN environment shall comply with the requirements in section 9. The measurements used for S-criteria and cell re-selection evaluation in CELL_FACH shall be performed according to section 8.4.

5.5.2.1 Cell re-selection delay

For UTRA FDD the cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

For UTRA TDD, the cell re-selection delay is defined as the time between the occurrence of an event which will trigger the cell re-selection process and the moment in time when the UE starts sending the RRC CELL UPDATE message to the UTRAN on the RACH.

For GSM the cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the random access in the target cell of the new RAT.

5.5.2.1.1 Intra frequency cell reselection

The cell re-selection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$T_{\text{reselection, intra}} = T_{\text{identify, intra}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} \text{ ms}$$

where

 $T_{identify_{=}intra}$ is specified in 8.4.2.2.1.

 T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

 T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell..

 T_{RA} = The additional delay caused by the random access procedure.

If a cell has been detectable at least $T_{identify,intra}$, the cell reselection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$T_{reselection, intra} = T_{Measurement_Period Intra} + T_{IU} + 20 + T_{SI} + T_{RA} ms$$

where

 $T_{Measurement,_Period Intra}$ = Specified in 8.4.2.2.2.

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

5.5.2.1.2 Inter frequency cell reselection

The cell re-selection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

$$T_{\text{reselection, inter}} = T_{\text{identify, inter}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} \text{ ms}$$

.where

 $T_{identify, inter}$ is specified in 8.4.2.3.1.

 T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

 T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell..

 T_{RA} = The additional delay caused by the random access procedure.

If a cell has been detectable at least $T_{identify,inter}$, the cell reselection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

 $T_{\text{reselection, inter}} = T_{\text{Measurement inter}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} T_{\text{reselection, inter}} = T_{\text{Measurement, inter}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} T_{\text{reselection, inter}} = T_{\text{Measurement, inter}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} T_{\text{reselection, inter}} = T_{\text{Measurement, inter}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} T_{\text{reselection, inter}} = T_{\text{Measurement, inter}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} T_{\text{reselection, inter}} = T_{\text{Measurement, inter}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} T_{\text{RA}} T_{\text{reselection, inter}} = T_{\text{Measurement, inter}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} T_{\text{RA}} T_{\text{reselection, inter}} = T_{\text{Measurement, inter}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} T_{\text{$

where

 $T_{\text{Measurement},_inter}$ = Specified in 8.4.2.3.2.

These requirements assume radio conditions to be sufficient, so that reading of system information can be done without errors.

6.4 Transport format combination selection in UE

6.4.1 Introduction

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format set, according to the functionality specified in section 11.4 in TS25.321. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321.

6.4.2 Requirements

The UE shall continuously evaluate based on the *Elimination, Recovery* and *Blocking* criteria defined below, how TFCs on an uplink DPDCH can be used for the purpose of TFC selection. The evaluation shall be performed for every TFC in the TFCS using the estimated UE transmit power. The UE transmit power estimation for a given TFC shall be made using the UE transmitted power measured over the measurement period, defined in 9.1.6.1 as one slot, and the gain factors of the corresponding TFC.

The UE shall consider the *Elimination* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC is greater than the Maximum UE transmitter power for at least X out of the last Y successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Elimination* criterion was detected.

The UE shall consider the *Recovery* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC has not been greater than the Maximum UE transmitter power for the last Z successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Recovery* criterion was detected.

The evaluation of the *Elimination* criterion and the *Recovery* criterion shall be performed at least once per radio frame.

The definitions of the parameters X,Y and Z which shall be used when evaluating the *Elimination* and the *Recovery* criteria when no compressed mode patterns are activated are given in Table 6.0.

Table 6.0: X, Y, Z	parameters for	TFC selection
--------------------	----------------	----------------------

X	Y	Z
15	30	30

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess-Power state for a duration of:

$$(T_{notify} + T_{modify} + T_{L1_proc})$$

where:

T_{notify} equals [15] ms, and

 T_{modify} equals MAX(T_{adapt_max}, T_{TTI}), and

T_{L1 proc} equals 15 ms, and

 T_{adapt_max} equals MAX(T_{adapt_1} , T_{adapt_2} , ..., T_{adapt_N}), and

N equals the number of logical channels that need to change rate, and

 T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms. For services where either UMTS_AMR2 or UMTS_AMR_WB is used, Tadapt shall be considered to be equal to the time required to switch from the current codec mode to a new supported codec mode. In that case Tadapt equals 20 ms + 40 ms per codec mode switch. E.g. Tadapt equals 60ms if one codec mode switch is necessary and Tadapt equals 140ms if 3 codec mode switches are necessary.

 T_{TTI} equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

Maximum UE transmitter power = MIN(Maximum allowed UL TX Power, UE maximum transmit power)

where

Maximum allowed UL TX Power is set by UTRAN and defined in [16], and

UE maximum transmit power is defined by the UE power class, and specified in [3].

6.5 Maximum allowed UL TX Power

UTRAN may limit the power the UE is using on the uplink by setting the maximum allowed UL TX power IE defined in TS25.331.

For each measurement period, the UE shall with the use of the UE transmitted power measurement, estimate if it has reached the Maximum allowed UL TX Power or not. With tolerances as defined for the UE transmitted power measurement accuracy (section 9.1.6.1), the UE output power shall not exceed the Maximum allowed UL TX Power, as set by the UTRAN.

For UE output powers that are outside the range covered by the UE transmitted power measurement the UE output power shall not exceed the Maximum allowed UL TX Power with more than the tolerances specified for the Open loop power control in TS 25.101 section 6.4.1.

8.1.2.2.5 Event Triggered Reporting

Reported measurements contained in event triggered measurement reports shall meet the requirements in section 9.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined T $_{identify intra}$, defined in Section 8.1.2.2.1

If a cell, belonging to monitored set, which the UE has identified and measured at least once over the measurement period, becomes undetectable for a period ≤ 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than $T_{Measurement_Period Intra}$ ms provided the timing to that cell has not changed more than +/-32 chips, the UE CPICH measurement capabilities of section 8.1.2.2.2 are valid and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{identify_intra}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement_Period Intra}$ when the L3 filter has not been used and the UE CPICH measurement capabilities of Section 8.1.2.2.2 are valid.

The event triggered measurement reporting delay on cells not belonging to monitored set, measured without L3 filtering, shall be less than the above defined T _{identify detected set} defined in Section 8.1.2.2.1.

8.1.2.3 FDD inter frequency measurements

In the CELL_DCH state when a transmission gap pattern sequence with the "FDD measurements" purpose is provided by the network the UE shall continuously measure identified inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

In order for the requirements in the following subsections to apply the UTRAN must provide a transmission gap pattern sequence with measurement purpose FDD measurement using the following combinations for TGL1, TGL2, TGD and Max TGPL:

TGL1 [slots]	TGL2 [slots]	TGD [slots]	Max TGPL [frames]
7	-	undefined	18
14	-	undefined	36
10	-	undefined	24
7	7	15269	18 + ceil(TGD/15)
14	14	45269	36 + ceil(TGD/15)

Table 8.1
A.4 Idle Mode

A.4.1 Cell selection

(void)

A.4.2 Cell Re-Selection

Two scenarios are considered:

- Scenario 1: Single carrier case
- Scenario 2: Multi carrier case

For each of them a test is proposed.

NOTE: Existing scenarios cover only requirements in section 4.2.2.2 and 4.2.2.3. More scenarios, covering requirements in section 4.2.2.1, will be added later.

A.4.2.1 Scenario 1: Single carrier case

A.6 RRC Connection Control

A.6.1 RRC Re-establishment delay

A.6.1.1 Test Purpose and Environment

The purpose is to verify that the RRC re-establishment delay is within the specified limits. These tests will verify the requirements in section 6.1.2.

A.6.1.1.1 TEST 1

The test parameters are given in table A.6.1 and table A.6.2 below. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consist of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Parameter	Unit	Value	Comment
DCH Parameters		DL Reference	As specified in TS 25.101, section A.3.1
		measurement	
		channel 12.2 kbps	
Power Control		On	
Active cell, initial condition		Cell 1	
Active cell, final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
T _{SI}	ms	1280	Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). Note: Since 1280 ms is one of the typical values for repeating system information blocks, T_{SI} of 1280 ms could be increased by the RRC procedure delay in order to allow the SIB repetition period of 1280 ms.
Monitored cell list size		24	Monitored set shall only include intra frequency neighbours.
Cell 2			Included in the monitored set.
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

Table A.6.1 General test parameters for RRC re-establishment delay, Test 1

Parameter	Unit	Cell 1		Ce	2	
		T1	T2	T1	T2	
Cell Frequency	ChNr	1		1		
CPICH_Ec/lor	dB	-1(0	-10		
PCCPCH_Ec/lor	dB	-12	2	-12		
SCH_Ec/lor	dB	-12	2	-12		
PICH_Ec/lor	dB	-1;	5	-15		
DCH_Ec/lor	dB	Note 1-17 -Infinity		Not applicable		
OCNS_Ec/lor	dB	<u>Note 2-1.049</u>	-0.941	-0.9	941	
\hat{I}_{or}/I_{oc}	dB	2,39	-Infinity	4,39	0,02	
Lac	dBm/ 3.84	-70				
	MHz					
CPICH_Ec/lo	dB	-15	-Infinity	-1	3	
Propagation Condition		AWGN				
Note 1: The DPCH leve	l is controlled	by the power contro	ol loop			
Note 2 : The power of the	OCNS channe	el that is added sha	<u>II make the total p</u>	power from the cell	to be equal to	
<u>l</u> or.						

Table A.6.2 Cell specific parameters for RRC re-establishment delay test, Test 1

A.6.1.1.2 TEST 2

The test parameters are given in table A.6.3 and table A.6.4 below. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

RC re-establishment delay, Test 2

Parameter	Unit	Value	Comment
DCH Parameters		DL Reference measurement channel 12.2 kbps	As specified in TS 25.101, section A.3.1
Power Control		On	
Active cell, initial condition		Cell 1	
Active cell, final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
Τ _{SI}	ms	1280	Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). Note: Since 1280 ms is one of the typical values for repeating system information blocks, T_{SI} of 1280 ms could be increased by the RRC procedure delay in order to allow the SIB repetition period of 1280 ms.
Monitored cell list size		24	Monitored set shall include 2 additional frequencies.
Cell 2			Cell 2 is not included in the monitored set. Cell 2 is located on one of the 2 additional frequencies of the monitored set.
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

Table A.6.4 Cell specific parameters for RRC re-establishment delay test, Test 2

Parameter	Unit	Cell 1		Ce	2	
		T1	T2	T1	T2	
Cell Frequency	ChNr		1	2	2	
CPICH_Ec/lor	dB	-1	10	-10		
PCCPCH_Ec/lor	dB	-1	12	-1	2	
SCH_Ec/lor	dB	-1	12	-1	2	
PICH_Ec/lor	dB	-1	15	-1	5	
DCH_Ec/lor	dB	-17Note 1 -Infinity		Not applicable		
OCNS_Ec/lor	dB	-1.049 <u>Note 2</u>	-0.941	-0.941		
\hat{I}_{or}/I_{oc}	dB	-3,35	-Infinity	-Infinity	0,02	
I _{oc}	dBm/ 3.84	-70				
60	MHz					
CPICH_Ec/lo	dB	-15	-Infinity	-Infinity	-13	
Propagation Condition		AWGN				
Note 1: The DPCH level is controlled by the power control loop						
Note 2 : The power of the OC	CNS channel	that is added sha	II make the total	power from the cel	to be equal to	
lor.						

A.6.1.2 Test Requirements

A.6.1.2.1 Test 1

The Re-establishment delay T_{RE-ESTABLISH} to a known cell shall be less than 1.9s.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

 $T_{\text{RE-ESTABLISH}} = T_{\text{RRC-RE-ESTABLISH}} + T_{\text{UE-RE-ESTABLISH-REQ-KNOWN}}.$

where

T_{RRC-RE-ESTABLISH}=160ms+(N₃₁₃-1)*10ms+T₃₁₃

 $T_{UE-RE-ESTABLISH_REQ-KNOWN} = 50ms + T_{search} + T_{SI} + T_{RA}$

N₃₁₃=20

T₃₁₃=0s

T_{search}=100ms

 T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

 T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 1820ms, allow 1.9s in the test case.

A.6.1.2.2 Test 2

The Re-establishment delay to an unknown cell shall be less than 4.2s.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

 $T_{\text{RE-ESTABLISH}} = T_{\text{RRC-RE-ESTABLISH}} + T_{\text{UE-RE-ESTABLISH-REQ-UNKNOWN}}.$

where

 $T_{RRC-RE-ESTABLISH} = 160ms + (N_{313}-1)*10ms + T_{313}$

 $T_{\text{UE-RE-ESTABLISH-REQ-UNKNOWN}} = 50 \text{ms} + T_{\text{search}} * \text{NF} + T_{SI} + T_{\text{RA}},$

N₃₁₃=20

T₃₁₃=0s

T_{search}=800ms

NF is the number of different frequencies in the monitored set. 3 frequencies are assumed in this test case.

 T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

 T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms).1280 ms is assumed in this test case.

This gives a total of 4120ms, allow 4.2s in the test case.

A.6.4 Transport format combination selection in UE

A.6.4.1 Test Purpose and Environment

The purpose is to verify the UE blocks (stops using) a currently used TFC when the UE output power is not sufficient to support that TFC. This test will verify the general requirement on TFC selection in section 6.4.

A.6.4.1.1 Interactive or Background, PS, UL: 64 kbps

The test will verify the general requirement on TFC selection in section 6.4 for a RAB intended for packet data services, i.e. Interactive or Background, PS, UL: 64kbps as defined in TS 34.108.

The test parameters are given in Table A.6.8, A.6.9 and Table A.6.10 below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

Details on the UL reference RAB in table A.6.8 and A.6.9 can be found in TS 34.108 section "Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH".

Table A.6.8: UL reference RAB, Interactive or Background

	TFI	64 kbps RAB (20ms TTI)	DCCH 3.4kbps (40ms TTI)
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

TFCI	(64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF0, TF1)
UL_TFC2	(TF1, TF0)
UL_TFC3	(TF1, TF1)
UL_TFC4	(TF2, TF0)
UL_TFC5	(TF2, TF1)
UL_TFC6	(TF3, TF0)
UL_TFC7	(TF3, TF1)
UL_TFC8	(TF4, TF0)
UL_TFC9	(TF4, TF1)

Table A.6.9: UL TFCI

Table A.6.10: General test parameters

Parameter	Unit	Value	Comment
TFCS size		10	
TFCS		UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC8, UL_TFC9	
Power Control		On	
Active cell		Cell 1	
Maximum allowed UL TX power	dBm	21	
T1	S	30	
T2	S	2	
Propagation condition		AWGN	

The radio conditions in the test shall be sufficient, so that decoding of the TPC commands can be made without errors.

The amount of available user data shall be sufficient to allow uplink transmission at the highest bit rate (UL_TFC8 or UL_TFC9) during the entire test and it shall be ensured that the UE is using UL_TFC8 or UL_TFC9 at the end of T1.

The test shall be performed in the following way:

Before time period T1:

The allowed TFCS according to table A.6.10 shall be signalled to the UE.

During time period T1:

The system simulator shall ensure that the UE output power is commanded to be between 14 to 15 dB below the UE Maximum allowed UL TX power.

During time period T2:

The system simulator shall continously send TPC_cmd=1 to the UE from the beginning of T2 until the end of T2.

NOTE: This will emulate that UL_TFC8 to UL_TFC9 can not be supported beacuse the UE reaches the maximum UL Tx power and still UTRAN is sending power-up commands. The time from the beginning of T2 until the UE blocks (stops using) UL_TFC8 and UL_TFC9 shall be measured.

A.6.4.2 Test Requirements

A.6.4.2.1 Interactive or Background, PS, UL: 64 kbps

The UE shall have stopped using UL_TFC8 and UL_TFC9 within 140 ms from beginning of time period T2.

The rate of correct tests observed during repeated tests shall be at least 90%.

NOTE: The delay from the begining of T2 can be expressed as:

$$T_{ramp} + T_{detect_block} + T_{notify} + T_{modify} + T_{L1_proc} + T_{align_TTI}$$

where:

T _{ramp}	Margin added for the increase of UE output power to the UE maximum power. A margin of 1 frame (10ms) is used, i.e. 15 TPC commands.
T_{detect_block}	The time needed to detect that UL_TFC8 and UL_TFC9 can no longer be supported, i.e. defines the maximum time to detect that the <i>Elimination</i> criterion is fulfilled for UL_TFC8 and UL_TFC9. According to X and Y values of 15 and 30 as defined in Section 6.4.2 and by assuming the maximum misalignment between the frame boundary, where the evaluation of the <i>Elimination</i> criterion is performed and the last slot needed for triggering the <i>Elimination</i> criterion on L1, T_{detect_block} becomes 15 slots +14 slots =19.33 ms.
T _{notify}	Equal to [15] ms, the time allowed for MAC to indicate to higher layers that UL_TFC8 and UL_TFC9 can no longer be supported.
T_{modify}	Equal to MAX(T_{adapt_max} , T_{TTI}) = MAX(0, 40)=40ms
T_{adapt_max}	Equals to 0ms for the case without codec.
T_{L1_proc}	Equals 15ms.
T_{align_TTI}	Align with the longest uplink TTI where the new TFC can be selected. The worst case equals 40ms in this test case.
T _{TTI}	See section 6.4.2. Equals 40 ms in the test case.

This gives a maximum delay of $(10 + 19.33 + \frac{15}{1} + 40 + 15 + 40)$ ms= 139.33 ms from the beginning of T2, allow 140 ms in the test case.

A.8 UE Measurements Procedures

A.8.1 FDD intra frequency measurements

A.8.1.1 Event triggered reporting in AWGN propagation conditions

A.8.1.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event. This test will partly verify the requirements in section 8.1.2 and 9.1.

The test parameters are given in Table A.8.1 and A.8.2 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. During time duration T1, the UE shall not have any timing information of cell 2.

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement	As specified in TS 25.101 section A.3.1
-		Channel 12.2 kbps	
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation		0	Applicable for event 1A
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24	
T1	S	5	
T2	S	5	
T3	S	5	

Table A.8.1: General test parameters for Event triggered reporting in AWGN propagation conditions

Table A.8.2: Cell specific test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Cell 1				Cell 2		
		T1	T2	Т3	T1	T2	T3	
CPICH_Ec/lor	dB		-10			-10		
PCCPCH_Ec/lor	dB		-12			-12		
SCH_Ec/lor	dB		-12			-12		
PICH_Ec/lor	dB		-15			-15		
DPCH_Ec/lor	dB		-17Note 1			N/A		
OCNS			-1.049 <u>Note</u>	<u> 2</u>		-0.941		
\hat{I}_{or}/I_{oc}	dB	0	6.97	0	-Infinity	5.97	-Infinity	
I _{oc}	dBm/3.84 MHz	-70						
CPICH_Ec/lo	dB	-13	-13	-13	-Infinity	-14	-Infinity	
Propagation		AWGN						
Condition								
Note 1: The DPCH level is controlled by the power control loop								
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or}								

A.8.1.1.2 Test Requirements

The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 800 ms from the beginning of time period T2.

The UE shall send one Event 1B triggered measurement report, with a measurement reporting delay less than 200 ms from the beginning of time period T3.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

NOTE: The actual overall delays measured in the test may be up to 2 x TTI_{UL DCCH} higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in the UL DCCH.

A.8.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition

A.8.1.2.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of events. This test will partly verify the requirements in section 8.1.2 and 9.1.

The test parameters are given in Table A.8.3 and A.8.4. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A, 1C and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table A.8.3: General test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in TS 25.101 section A.3.1
		12.2 kbps	
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Replacement		0	Applicable for event 1C
activation threshold			
Reporting		0	Applicable for event 1A
deactivation			
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list		32	
size			
T1	S	10	
T2	S	10	
T3	S	5	
T4	S	10	

Table A.8.4: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit		Ce	ll 1			Ce	ll 2		Cell3				
		T1	T2	Т3	T4	T1	T2	T3	T4	T1	T2	T3	T4	
CPICH_Ec/lor	dB	-10				-1	-10			-10				
PCCPCH_Ec/ lor	dB	-12				-12			-12					
SCH_Ec/lor	dB	-12					-12			-12				
PICH_Ec/lor	dB	-15					-1	15			-15			
DPCH_Ec/lor	dB	-17 <u>Note 1</u>					N	/A		N/A				
OCNS_Ec/lor	dB	-1.049Note 2				-0.9	941		-0.941					
\hat{I}_{or}/I_{oc}	dB	6.97	6.93	5.97	6.12	-Inf	9.43	6.97	7.62	5.97	6.93	-Inf	5.62	
I _{oc}	dBm/ 3.84 MHz		-85											
CPICH_Ec/lo	dB	-13	-16	-14	-15.5	-Inf	-13.5	-13	-14	-14	-16	-Inf	-16	
Propagation Condition		AWGN												
Note 1: The I Note 2 : The po	Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to level													

A.8.1.2.2 Test Requirements

- a) The UE shall send one Event 1A triggered measurement report for Cell3, with a measurement reporting delay less than 800 ms from the beginning of time period T1.
- b) The UE may send one Event 1C triggered measurement report for Cell3 after the beginning of the time period T1.
- c) The UE shall send one Event 1C triggered measurement report for Cell2, with a measurement reporting delay less than 800 ms from the beginning of time period T2.
- d) The UE shall send one Event 1A triggered measurement report for Cell2, with a measurement reporting delay less than 800 ms from the beginning of time period T2.
- e) The UE shall send one Event 1B triggered measurement report for Cell3, with a measurement reporting delay less than 200 ms from the beginning of time period T3.
- f) The UE shall send one Event 1A triggered measurement report for Cell3, with a measurement reporting delay less than 200 ms from the beginning of time period T4.
- g) The UE may send one Event 1C triggered measurement report for Cell2 after the beginning of the time period T4.
- h) The UE may send one Event 1C triggered measurement report for Cell3 after the beginning of the time period T4.
- i) The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

NOTE: The actual overall delays measured in the test may be up to 2 x TTI_{UL DCCH} higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in the UL DCCH.

A.8.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition

A.8.1.3.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of events. This test will partly verify the requirements in section 8.1.2 and 9.1.

The test parameters are given in Table A.8.5 and A.8.6. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table A.8.5: General test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement	As specified in TS 25.101 section A.3.1
		Channel 12.2 kbps	
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation		0	Applicable for event 1A
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		32	
T1	S	10	
T2	S	10	
T3	S	10	
T4	S	10	

Table A.8.6: Cell specific test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit		Ce	II 1			Ce	ll 2			Ce	ell3	
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/lor	dB		-10				-10			-10			
PCCPCH_Ec/ lor	dB		-12				-12				-12		
SCH_Ec/lor	dB		-12				-12			-12			
PICH_Ec/lor	dB	-15				-15			-15				
DPCH_Ec/lor	dB	-17 <u>Note 1</u>					N/A			N/A			
OCNS_Ec/lor	dB		-1.049	Note 2			-0.941			-0.941			
\hat{I}_{or}/I_{oc}	dB	14.55	28.51	14.45	28.51	-Inf	27.51	13.95	21.51	8.05	21.51	13.95	27.51
I _{oc}	dBm/ 3.84 MHz		-85										
CPICH_Ec/lo	dB	-11	-13	-14.5	-13	-Inf	-14.0	-15	-20	-17.5	-20	-15	-14
Propagation Condition		AWGN											
Note 1: The Note 2 : The po	Note 1: The DPCH level is controlled by the power control loop												

A.8.1.3.2 Test Requirements

- a) The UE shall send one Event 1A triggered measurement report for Cell2, with a measurement reporting delay less than 800 ms from the beginning of time period T2.
- b) The UE shall send one Event 1A triggered measurement report for Cell3, with a measurement reporting delay less than 200 ms from the beginning of time period T3.
- c) The UE shall send one Event 1B triggered measurement report for Cell2, with a measurement reporting delay less than 200 ms from the beginning of time period T4.
- d) The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

NOTE: The actual overall delays measured in the test may be up to $2 \times TTI_{UL DCCH}$ higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in the UL DCCH.

A.8.1.4 Correct reporting of neighbours in fading propagation condition

A.8.1.4.1 Test Purpose and Environment

The purpose of this test is to verify that the UE performs sufficient layer 1 filtering of the measurements, see section 9.1, which are the base for the event evaluation. The test is performed in fading propagation conditions. This test will partly verify the requirements in section 8.1.2.

The test parameters are given in Table A.8.7 and A.8.8.In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and Event 1B shall be used. The test consists of two successive time periods, each with a time duration of T1 and T2 respectively.

The TTI of the uplink DCCH shall be 20ms.

Table A.8.7: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	0	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	120	
Filter coefficient		0	
Monitored cell list size		24	Signalled before time T1.
T1	S	200	
T2	S	201	

Table A.8.8: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Ce	ell 1	Cell 2					
		T1	T2	T1	T2				
CPICH_Ec/lor	dB	-10		-10					
PCCPCH_Ec/lor	dB	-12		-12					
SCH_Ec/lor	dB	-12		-12					
PICH_Ec/lor	dB	-15		-15					
DPCH_Ec/lor	dB	-17Note 1		N/A					
OCNS		-1.049Note 2		-0.941					
\hat{I}_{or}/I_{oc}	dB	7.29	3.29	3.29	7.29				
I _{oc}	dBm/3.84 MHz	-70							
CPICH_Ec/lo	dB	-12	-16	-16	-12				
Propagation Condition	Propagation Condition Case 5 as specified in Annex B of TS25.101								
Note 1: The DPC	Note 1: The DPCH level is controlled by the power control loop								
Note 2 : The power	Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to								
be equal to I _{or}									

A.8.1.4.2 Test Requirements

a) The number of received event 1A reports <u>for Cell2</u> during time period T1 shall be less than 60.

- b) During the first 1 s of time period T2 no event reports shall be counted.
- c) The number of received event 1B reports counted from 1s after the beginning of time period T2 until the end of time period T2 shall be less than 60.

A.8.1.5 Event triggered reporting of multiple neighbour cells in Case 1 fading condition

A.8.1.5.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event in Case1 fading propagation condition. This test will partly verify the requirements in section 8.1.2.

The test parameters are given in Table A.8.8A and A.8.8B below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A shall be used and "CFN-SFN-Observed Time Difference" shall be reported. The test consists of two successive time periods, with time duration of T1 and T2, respectively. During time duration T1, the UE shall not have any timing information of invisible cells.

Table A.8.8A: General test parameters for event triggered reporting in multi-cell pedestrian environment

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement	As specified in TS 25.101
		Channel 12.2 kbps	section A.3.1
Power Control		On	
Active cells		Cell2, Cell3, Cell4	
Hysteresis	dB	0	Applicable for event 1A
Time to Trigger	ms	0	Applicable for event 1A
Filter coefficient		0	Applicable for event 1A
Reporting range R _{1a}	dB	9	Applicable for event 1A
W		0	Applicable for event 1A
TriggeringCondition		activeSetAndMonitoredSetCells	Applicable for event 1A
Monitored cell list size		32	
T1	S	5	
T2	S	5	

Table 8.8B: Cell specific test parameters for event triggered reporting in multi-cell pedestrian environment

Parameter	Unit	Ce	11	Ce	ll 2	Ce	II 3	Cell 4	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel		Chan	nol 1	Channel 1		Char	nol 1	Chan	nol 1
Number		Chan		Channel I		Charmer		Charmer I	
CPICH_Ec/lor	dB	-1	0	-*	10	-10		-10	
PCCPCH_Ec/lor	dB	-1	2	-*	12	-*	12	-1	12
SCH_Ec/lor	dB	-1	2	-*	12	-*	12	-1	12
PICH_Ec/lor	dB	-1	5	-'	15	-'	15	-^	15
DPCH_Ec/lor	dB	n.a.		Not	te 1	Not	te 1	Not	e 1
OCNS_Ec/lor	dB	-0.9	-0.941 Note 2		Not	te 2	Note 2		
\hat{I}_{or}/I_{oc}	dB	-∞	1.3	4.3	1.3	4.3	1.3	1.3	4.3
I _{oc}	dBm/3.84 MHz	-70							
Propagation					Case 1	(3km/h)			
Condition					0030 1				
CPICH_Ec/lo	dB	-∞	-17.6	-14.6	-17.6	-14.6	-17.6	-17.6	-14.6
SCH Ê		-∞	-20.0	-17.0	-20.0	-17.0	-20.0	-20.0	-17.0
$\underline{DCH} = \underline{L}_{c,maxpath}$	dB								
I_o									
NOTE 1: The DPCH	level is contr	rolled by t	the pow	er contr	ol loop.				
NOTE 2: The power of the OCNS channel that is added shall make the total power equal to I _{or} .									
NOTE 3: CPICH_Ec/lo and SCH_Ec_maxpath/lo levels have been calculated from other									
parameters	s for informati	ion purpo	ses. Th	ey are r	not setta	able ther	nselves		

A.8.1.5.2 Test Requirements

The UE shall send one Event 1A triggered measurement report for Cell 1 with a measurement reporting delay less than 800 ms from the beginning of time period T2.

The rate of correct events observed during repeated tests shall be at least 90%.

NOTE: The actual overall delays measured in the test may be up to 2 x TTI_{UL DCCH} higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in the UL DCCH.

A.8.1.6 Event triggered reporting of multiple neighbour cells in Case 3 fading condition

A.8.1.6.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event in Case3 fading propagation condition. This test will partly verify the requirements in section 8.1.2.

The test parameters are given in Table A.8.8C and A.8.8D below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1F shall be used and "CFN-SFN-Observed Time Difference" shall be reported. The test consists of two successive time periods, with time duration of T1 and T2 respectively. During time duration T1, the UE shall not have any timing information of invisible cells.

Table A.8.8C: General test parameters for event triggered reporting in multi-cell vehicular environment

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Active cells		Cell2, Cell3, Cell4	
Hysteresis	dB	0	Applicable for event 1A
Time to Trigger	ms	0	Applicable for event 1A
Filter coefficient		0	Applicable for event 1A and event 1F
Reporting range R _{1a}	dB	8	Applicable for event 1A
W		0	Applicable for event 1A
TriggeringCondition		activeSetAndMonitoredSetCells	Applicable for event 1A
Absolute threshold <i>T</i> _{1f}	dB	-20	Applicable for event 1F
Time to Trigger	ms	0	Applicable for event 1F
TriggeringCondition		activeSet	Applicable for event 1F
Monitored cell list size		32	
T1	S	5	
T2	S	5	

Table 8.8D: Cell specific test parameters for event triggered reporting in multi-cell vehicular environment

Parameter	Unit	Ce	ell 1	Ce	12	Ce	II 3	Cell 4		
		T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel		Cha	nnel 1	Chan	nel 1	Chan	nel 1	Char	nel 1	
Number		ona		onun	Charmer 1		Channel 1		Onanner 1	
CPICH_Ec/lor	dB	-	10	-1	0	-1	10	- '	10	
PCCPCH_Ec/lor	dB	-	12	-1	2	-1	12	-'	12	
SCH_Ec/lor	dB	-9	9.3	-9.	.3	-9	.3	-9	.3	
PICH_Ec/lor	dB	-	15	-1	5	-1	15	-	15	
DPCH_Ec/lor	dB	n	.a.	Not	e 1	Not	e 1	Not	te 1	
OCNS_Ec/lor	dB	No	te 2	Not	e 2	Not	e 2	Not	te 2	
\hat{I}_{or}/I_{oc}	dB	-8	1.1	3.6	4.6	3.6	4.6	6.6	-8	
I _{oc}	dBm/3.84	-70								
· · ·	MHZ	0 0 (100) (1)								
Propagation				Ca	ase 3 (12	UKM/N)				
	5		40.0	40.5	445	40 5	445	40 F		
CPICH_EC/IO	dB	-00	-18.0	-16.5	-14.5	-16.5	-14.5	-13.5	-∞	
$SCH \hat{E}$.		-∞	-20.0	-18.5	-16.5	18.5	-16.5	-15.5	-∞	
$\sim c_{c,maxpath}$	dB									
I_o										
NOTE 1: The DPCH	level is contro	olled by	the powe	r control	loop.					
NOTE 2: The power of the OCNS channel that is added shall make the total power equal to I _{or} .										
NOTE 3: CPICH_Ec/lo, SCH_Ec_maxpath/lo, and I_o levels have been calculated from other										
parameters	for information	on purpo	oses. The	y are not	settable	themse	elves.			

A.8.1.6.2 Test Requirements

The UE shall send an Event 1A triggered measurement report for Cell 1, with a measurement reporting delay less than 800 ms from the beginning of time period T2. The UE shall send an Event 1F triggered measurement report for Cell 4, with a measurement reporting delay less than 200 ms from the beginning of time period T2.

The rate of correct events 1A for Cell1 observed during repeated tests shall be at least 90%.

NOTE: The actual overall delays measured in the test may be up to 2 x TTI_{UL DCCH} higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in the UL DCCH.

A.8.2 FDD inter frequency measurements

A.8.2.1 Correct reporting of neighbours in AWGN propagation condition

A.8.2.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.1.2.3.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.8.9 and A.8.10 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in TS 25.101 section A.3.1
-		12.2 kbps	
Power Control		On	
Compressed mode		A.22 set 1	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Threshold non used	dB	-18	Absolute Ec/I0 threshold for event 2C
frequency			
Reporting range	dB	4	Applicable for event 1A
Hysteresis	dB	0	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation		0	Applicable for event 1A
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1	Measurement control information is
		16 on channel 2	sent before the compressed mode
			pattern starts.
T1	S	10	
T2	S	5	

Table A.8.9: General test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1		Cel	12	Cell 3		
		T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2		
CPICH_Ec/lor	dB	-10		-10		-10		
PCCPCH_Ec/lor	dB	-12		-12		-12		
SCH_Ec/lor	dB	-12		-12		-12		
PICH_Ec/lor	dB	-15		-15		-15		
DPCH_Ec/lor	dB	-17 <u>Note 1</u>		N/A		N/A		
OCNS		- <u>1.049</u> No	<u>te 2</u>	-0.941		-0.941		
\hat{I}_{or}/I_{oc}	dB	0	5.42	-Infinity	3.92	-1.8	-1.8	
I _{oc}	dBm/3.84 MHz	-70				-70		
CPICH_Ec/lo	dB	-13	-13	-Infinity	-14.5	-14	-14	
Propagation Condition	AWGN							
Note 1: The DPCH level is controlled by the power control loop								
Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to								
be equal to I _{or}								

TableA.8.10: Cell Specific parameters for Correct reporting of neighbours in AWGN propagation condition

A.8.2.1.2 Test Requirements

- a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 9 seconds from the beginning of time period T1.
- b) The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 956.2 ms from the beginning of time period T2. The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

NOTE: The actual overall delays measured in the test may be up to 2 x TTI_{UL DCCH} higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in the UL DCCH.

A.8.2.2 Correct reporting of neighbours in Fading propagation condition

A.8.2.2.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.1.2.3. The test parameters are given in Table A.8.11 and A.8.12. In the measurement control information it is indicated to the UE that event-triggered reporting 2C shall be used. The test consists of two successive time periods, each with a time duration of T1 and T2 respectively.

Table A.8.11: General test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Compressed mode		A.22 set 2 (TGPL1=12)	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Absolute Threshold (Ec/N0) for Event 2c	dB	-18	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24 8 on frequency Channel 2	Measurement control information is sent before the compressed mode pattern starts.
Propagation Condition		Case 5	As specified in Annex B of TS 25.101.
Frequency offset	ppm	+/- 0.1	Frequency offset between Cell 1 and Cell 2.
T1	S	2	
T2	S	40	

Table A.8.12: Test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Ce	Cell 1		ell 2
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1	•	Channel 2	
CPICH_Ec/lor	dB	-10		-10	
PCCPCH_Ec/lor	dB	-12		-12	
SCH_Ec/lor	dB	-12		-12	
PICH_Ec/lor	dB	-15 -15			
DPCH_Ec/lor	dB	Note 1 N/A			
OCNS		Note 2		-0.941	
\hat{I}_{or}/I_{oc}	dB	0		-Infinity	-1.8
I _{oc}	dBm/3.84 MHz	m/3.84 MHz -70 -70			
CPICH_Ec/lo	dB	-13		-Infinity	-14
Propagation Condition	ation Condition Case 5 as specified in Annex B of TS25.101				
Note 1: The DPCH level is controlled by the power control loop					
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to					n the cell to
be equal to I_{or} .					

A.8.2.2.2 Test Requirements

- a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 36 seconds from the beginning of time period T2.
- b) The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

A.8.2.3 Correct reporting of neighbours in fading propagation condition using TGL1=14

A.8.2.3.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.1.2.3. The test parameters are given in Table

A.8.12A and A.8.12B. In the measurement control information it is indicated to the UE that event-triggered reporting 2C shall be used. The test consists of two successive time periods, each with time duration of T1 and T2 respectively.

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in TS 25.101 section A.3.1
		12.2 kbps	
Power Control		On	
Compressed mode		A.22 set 4	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Absolute Threshold	dB	-18	
(Ec/N0) for Event 2c			
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24	Measurement control information is
		8 on frequency Channel 2	sent before the compressed mode pattern starts.
Propagation Condition		Case 5	As specified in Annex B of TS 25.101.
Frequency offset	ppm	+/- 0.1	Frequency offset between Cell 1 and
			Cell 2.
T1	S	2	
T2	S	6	

Table A.8.12A: General test parameters for Correct reporting of neighbours in Fading propagation condition

Table A.8.12B: Test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Ce	ll 1	Cell 2	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1	•	Channel 2	
CPICH_Ec/lor	dB	-10		-10	
PCCPCH_Ec/lor	dB	-12		-12	
SCH_Ec/lor	dB	-12 -12			
PICH_Ec/lor	dB	-15 -15			
DPCH_Ec/lor	dB	Note 1 N/A			
OCNS		Note 2		-0.941	
\hat{I}_{or}/I_{oc}	dB	0		-Infinity	-1.8
I _{oc}	dBm/3.84 MHz	m/3.84 MHz -70 -70			
CPICH_Ec/lo	dB	-13		-Infinity	-14
Propagation Condition	Case 5 as specified in Annex B of TS25.101				
Note 1: The DPCH level is controlled by the power control loop					
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to					n the cell to
be equal to I_{or} .					

A.8.2.3.2 Test Requirements

- a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 5 seconds from the beginning of time period T2.
- b) The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

A.8.3 TDD measurements

A.8.3.1 Correct reporting of TDD neighbours in AWGN propagation condition

A.8.3.1.1 Test Purpose and Environment

A.8.3.1.1.1 3.84 Mcps TDD Option

The purpose of this test is to verify that the UE makes correct reporting of events when measuring on UTRA TDD cells. This test will partly verify the requirements in section 8.1.2 and 9.1.

The test parameters are given in Table A.8.13, A.8.14 and A.14A below. The test consists of two successive time periods, with time duration of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA FDD cell and cell 2 being a UTRA TDD neighbour cell.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

The TTI of the uplink DCCH shall be 20ms.

Table A.8.13: General test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Para	neter	Unit	Value	Comment
DCH pai	rameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power	Control		On	
Target qual DT	ity value on CH	BLER	0.01	
Compres	sed mode		A.22 set 3	As specified in TS25.101 section A.5
Initial	Active cell		Cell 1	FDD cell
conditions	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 1	FDD cell
()	dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hyste	eresis	dB	0	Hysteresis parameter for event 2C
Time to	Trigger	ms	0	
Threshold frequ	non-used lency	dBm	-71	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
Т	1	S	15	
Т	2	S	10	

Table A.8.14: Cell 1 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 1		
		T1, T2		
UTRA RF Channel		Channel 1		
Number		Channer		
CPICH_Ec/lor	dB	-10		
P-CCPCH_Ec/lor	dB	-12		
SCH_Ec/lor	dB	-12		
PICH_Ec/lor	dB	-15		
DPCH_Ec/lor	dB	Note 1		
OCNS_Ec/lor	dB	Note 2		
\hat{I}_{or}/I_{oc}	dB	0		
I _{oc}	dBm/3.84 MHz	-70		
CPICH_Ec/lo	dB	-13		
Propagation Condition	pagation Condition AWGN			
Note 1: The DPCH level is controlled by the power control loop				
Note 2: The power of	Note 2: The power of the OCNS channel that is added shall make the total			
power from the cell to be equal to $I_{\rm or}$.				

Table A.5.14A: Cell 2 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 2			
DL timeslot number		0 8			3
		T1	T2	T1	T2
UTRA RF Channel			Char	nel 2	
Number			Char		
P-CCPCH_Ec/lor	dB	-	3	n.	a.
PICH_Ec/lor	dB	n.a3			
SCH_Ec/lor	dB	-9			
SCH_t _{offset}	dB		1	0	
OCNS_Ec/lor	dB		-3.	12	
P-CCPCH RSCP	dBm	-75	-67	n.a.	n.a.
\hat{I}_{or}/I_{oc}	dB	-2	6	-2	6
I _{oc}	dBm/3,84 MHz	-70			
Propagation Condition		AWGN			
Note that the transmit energy per PN chip for the SCH is averaged over the 256					
chip duration when the SCH is present in the time slot.					

A.8.3.1.1.2 1.28 Mcps TDD Option

The purpose of this test is to verify that the UE makes correct reporting of events when measuring on UTRA TDD cells. This test will partly verify the requirements in section 8.1.2. and 9.1.

The test parameters are given in Table A.8.14B, A.8.14C and A.8.14D below. The test consists of two successive time periods, with time duration of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA FDD cell and cell 2 being a UTRA TDD neighbour cell.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

The TTI of the uplink DCCH shall be 20ms.

Table A.8.14B: General test parameters for Correct reporting of TDD neighbours in AWGNpropagation condition

Para	meter	Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power	Control		On	
Target quality	value on DTCH	BLER	0.01	
Compres	ssed mode		A.22 set 3	As specified in TS25.101 section A.5
Initial	Active cell		Cell 1	FDD cell
conditions	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 1	FDD cell
	0	dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hyst	eresis	dB	0	Hysteresis parameter for event 2C
Time to	o Trigger	ms	0	
Threshold non	-used frequency	dBm	-71	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
-	T1	S	15	
-	T2	S	10	

Table A.8.14C: Cell 1 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 1		
		T1, T2		
UTRA RF Channel		Channel 1		
Number		Charmer 1		
CPICH_Ec/lor	dB	-10		
P-CCPCH_Ec/lor	dB	-12		
SCH_Ec/lor	dB	-12		
PICH_Ec/lor	dB	-15		
DPCH_Ec/lor	dB	Note 1		
OCNS_Ec/lor	dB	Note 2		
\hat{I}_{or}/I_{oc}	dB	0		
I _{oc}	dBm/3.84 MHz	-70		
CPICH_Ec/lo	dB	-13		
Propagation Condition	an AWGN			
Note 1: The DPCH level is controlled by the power control loop				
Note 2: The power of the OCNS channel that is added shall make the total				
power from the cell to be equal to $I_{\rm or}$.				

Table A.8.14D: Cell 2 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 2			
DL timeslot number		0		Dw	PTs
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH_Ec/lor	dB	-3	-3		
DwPCH _Ec/lor	dB			0	
OCNS_Ec/lor	dB	-3	3		
P-CCPCH RSCP	dBm	-75	-67		
\hat{I}_{or}/I_{oc}	dB	-2	6	-2	6
I _{oc}	dBm/1.28 MHz	-70			
Propagation Condition			AW	/GN	

A.8.3.1.2 Test Requirements

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 8.8 s from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of events correctly reported during repeated tests shall be at least 90%.

A.8.4 GSM measurements

A.8.4.1 Correct reporting of GSM neighbours in AWGN propagation condition

A.8.4.1.1 Test Purpose and Environment

The purpose of these tests is to verify that the UE makes correct reporting of an event when doing inter-RAT GSM measurements. The test will partly verify the requirements in section 8.1.2.5. The requirements are also applicable for a UE not requiring compressed mode, in which case no compressed mode pattern should be sent for the parameters specified in table A8.15.

The test consists of three successive time periods, with a time duration T1, T2 and T3. The test parameters are given in tables A.8.15, A.8.16 and A.8.17 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3B and 3C shall be used.

A.8.4.1.1.1 Test 1. With BSIC verification required

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns			Only applicable for UE requiring compressed mode patterns
- GSM carrier RSSI measurement		DL Compressed mode reference pattern 2 in Set 2	As specified in table A.22 TS 25.101 section A.5
- GSM Initial BSIC identification		Pattern 2	As specified in section 8.1.2.5.2.1 table 8.7.
Active cell		Cell 1	
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the compressed mode patterns starts.
N Identify abort		66	Taken from table 8.7.
T1	S	5	
T2	S	7	
T3	S	5	

Table A.8.15: General test parameters for Correct reporting of GSM neighbours in AWGN propagation condition, Test 1

Table A.8.16: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 1)

Parameter	Unit	Cell 1			
		T1, T2, T3			
UTRA RF Channel		Channel 1			
Number					
CPICH_Ec/lor	dB	-10			
PCCPCH_Ec/lor	dB	-12			
SCH_Ec/lor	dB	-12			
PICH_Ec/lor	dB	-15			
DPCH_Ec/lor	dB	Note 1			
OCNS		Note 2			
\hat{I}_{or}/I_{oc}	dB	0			
Lac	dBm/	-85			
	3.84				
	MHz				
CPICH_Ec/lo	dB	-13			
Propagation Condition	Propagation Condition AWGN				
Note 1: The DPCH leve	Note 1: The DPCH level is controlled by the power control loop.				
Note 2: The power of the	Note 2: The power of the OCNS channel that is added shall make the total				
power from the cell to be equal to I _{or} .					

Table A.8.17: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 2)

Paramotor	Unit	Cell 2				
Falailletei	Unit	T1	T2	Т3		
Absolute RF Channel Number		ARFCN 1				
RXLEV	dBm	-Infinity	-75	-85		

A.8.4.1.1.2 Test 2: Without BSIC verification required

Table A.8.18: General test parameters for Correct reporting of GSM neighbours in AWGN propagation condition, Test 2

Parameter	Unit	Value	Comment		
DCH parameters		DL Reference Measurement Channel	As specified in TS 25.101 section A.3.1		
		12.2 kbps			
Power Control		On			
Target quality value on DTCH	BLER	0.01			
Compressed mode			Only applicable for UE requiring		
patterns			compressed mode patterns		
- GSM carrier RSSI					
measurement		DL Compressed mode reference	As specified in table A.22 TS 25.101		
		pattern 2 in Set 2	section A.5		
Active cell		Cell 1			
Inter-RAT measurement		GSM Carrier RSSI			
quantity					
BSIC verification		not required			
required					
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.		
Hysteresis	dB	0			
Time to Trigger	ms	0			
Filter coefficient		0			
Monitored cell list size		24 FDD neighbours on Channel 1	Measurement control information is		
		6 GSM neighbours including ARFCN 1	sent before the compressed mode		
			patterns starts.		
T1	S	5			
T2	S	2			
ТЗ	S	5			

Table A.8.19: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 1)

Parameter	Unit	Cell 1				
		T1, T2, T3				
UTRA RF Channel		Channel 1				
Number						
CPICH_Ec/lor	dB	-10				
PCCPCH_Ec/lor	dB	-12				
SCH_Ec/lor	dB	-12				
PICH_Ec/lor	dB	-15				
DPCH_Ec/lor	dB	Note 1				
OCNS		Note 2				
\hat{I}_{or}/I_{oc}	dB	0				
I _{oc}	dBm/ 3.84 MHz	-85				
CPICH_Ec/lo	dB	-13				
Propagation		AWGN				
Condition						
Note 1: The DPCH level is controlled by the power control loop.						
Note 2: The power of the OCNS channel that is added shall make the total						
power from the cell to be equal to I _{or} .						

Table A.8.20: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 2)

Paramotor	Unit	Cell 2		
Falameter	Onit	T1	T2	Т3
Absolute RF Channel Number		ARFCN 1		
RXLEV	dBm	-Infinity	-75	-85

A.8.4.1.2 Test Requirements

A.8.4.1.2.1 TEST 1 With BSIC verification required

The UE shall send one Event 3C triggered measurement report for Cell2, with a measurement reporting delay less than 6.24 s from the beginning of time period T2.

The UE shall send one Event 3B triggered measurement report for Cell2, with a measurement reporting delay less than 960 ms from the beginning of time period T3.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

A.8.4.1.2.2 TEST 2 Without BSIC verification required

The UE shall send one Event 3C triggered measurement report for Cell2, with a measurement reporting delay less than 960 ms from the beginning of time period T2.

The UE shall send one Event 3B triggered measurement report for Cell2, with a measurement reporting delay less than 960 ms from the beginning of time period T3.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.