## TSG RAN Meeting #19 Birmingham, United Kingdom, 11 - 14 March, 2003

RP-030027

Title CRs (R'99 and Rel-4/Rel-5/Rel-6 Category A) to TS 25.133

Source TSG RAN WG4

Agenda Item 8.4.3

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-020012	25.133	510		F	R99	3.12.0	Correction of interruption time in FDD/TDD Hard Handover	TEI
R4-020013	25.133	511		Α	Rel-4	4.7.0	Correction of interruption time in FDD/TDD Hard Handover	TEI
R4-020014	25.133	512		Α	Rel-5	5.5.0	Correction of interruption time in FDD/TDD Hard Handover	TEI
R4-020015	25.133	513		Α	Rel-6	6.0.0	Correction of interruption time in FDD/TDD Hard Handover	TEI
R4-020021	25.133	514		F	R99	3.12.0	Applicability of Timer T-reselection for 2G cell reselection.	TEI
R4-020022	25.133	515		Α	Rel-4	4.7.0	Applicability of Timer T-reselection for 2G cell reselection.	TEI
R4-020023	25.133	516		Α	Rel-5	5.5.0	Applicability of Timer T-reselection for 2G cell reselection.	TEI
R4-020024	25.133	517		Α	Rel-6	6.0.0	Applicability of Timer T-reselection for 2G cell reselection.	TEI
R4-020154	25.133	528		F	R99	3.12.0	Correction of Hard HO test case	TEI
R4-020155	25.133	529		Α	Rel-4	4.7.0	Correction of Hard HO test case	TEI
R4-020076	25.133	521		Α	Rel-5	5.5.0	Correction of Hard HO test case	TEI
R4-020077	25.133	522		Α	Rel-6	6.0.0	Correction of Hard HO test case	TEI
R4-020248	25.133	544		F	R99	3.12.0	Constant Value in Random Access Test requirements	TEI
R4-020249	25.133	545		Α	Rel-4	4.7.0	Constant Value in Random Access Test requirements	TEI
R4-020250	25.133	546		Α	Rel-5	5.5.0	Constant Value in Random Access Test requirements	TEI
R4-020251	25.133	547		Α	Rel-6	6.0.0	Constant Value in Random Access Test requirements	TEI

# 3GPP TSG RAN WG4 (Radio) Meeting #26

R4-030012

Madrid, Spain 17 - 22 February, 2003

		CHAN	NGE REQ	UES	ST		C	R-Form-v7
*	25	.133 CR 510	жrev	G	₩ C	urrent versi	on: 3.12.0	₩
For <u>HELP</u> on u	sing t	this form, see bottom	of this page or	look at	t the p	oop-up text (	over the % symi	bols.
Proposed change a	affec	<i>ts:</i> UICC apps器[	ME X	Radio	o Acc	ess Network	X Core Net	work
Title: 第	Col	rrection of interruption	n time in FDD/T	DD Ha	rd Ha	andover		
Source: #	RA	N WG4						
Work item code: ∺	TE	ļ				Date: ♯	05/03/2003	
Category: 第 Reason for change	Deta be fo	one of the following cat F (correction) A (corresponds to a co B (addition of feature), C (functional modification) illed explanations of the bound in 3GPP TR 21.90  In this test case, the into consideration. The aligned in this test case.	prrection in an ear tion of feature) in) above categories 0.	ainty of N betw	f the T	2 ( R96 ( R97 ( R98 ( R99 ( Rel-4 ( Rel-5 ( Rel-6 (	ll2 is not always	taken
		cell1 and cell2 isn't a the given test require DCH occurs to align uplink TTI boundary the interruption time The transmission d maximum uplink TT	aligned, uplink Dement. The tran the timing of up of the target ce.	OCCH r smissi olink DO II. This	may non de CH traded delay	not be able to all and a maximum ansmission of a maximum ansmission of a maximum and a	o be transmitted ximum TTI of the with the maximul into consideration ansmission with	d within e uplink um on with
Summary of chang	r <b>e:</b> ₩	To add the maximum To define DCH para This changes are masses.	ameter as UL R	eferen	се Ме	easurement	Channel 12.2 k	
Consequences if not approved:	Ж	Even "Good UE" m the uplink TTI boun		test. T	he UI	E may not tr	ansmit uplink D	CH at
Clauses affected:	ж	5.3, A.5						
Other specs affected:	¥	Y N X Other core sp X Test specific X O&M Specific	ations	₩ 3	34.121	I		

Other comments: # Equivalent CRs in other Releases: CR511 cat. A to 25.133 v4.7.0, CR512 cat. A to 25.133 v5.5.0, CR513 cat. A to 25.133 v6.0.0

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

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

- 1) Fill out the above form. The symbols above marked \( \mathcal{x} \) 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

## 5.3 FDD/TDD Handover

### 5.3.1 Introduction

The purpose of FDD/TDD handover is to change the radio access mode from FDD to TDD. The FDD/TDD handover procedure is initiated from UTRAN with a RRC message that implies a hard handover as described in [16].

## 5.3.2 Requirements

The requirements in this section shall apply to UE supporting FDD and TDD.

## 5.3.2.1 FDD/TDD handover delay

RRC procedure performance values for all RRC procedures that can command a hard handover are specified [16]

When the UE receives a RRC message implying FDD/TDD handover with the activation time "now" or earlier than  $D_{handover}$  seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH within  $D_{handover}$  seconds from the end of the last TTI containing the RRC command.

If the access is delayed to an indicated activation time later than  $D_{handover}$  seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH at the designated activation time.

where:

 $D_{handover}$  equals the RRC procedure performance value as defined in [16] plus the interruption time stated in section 5.3.2.2.

#### 5.3.2.2 Interruption time

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DPDCH and the time the UE starts transmission of the new uplink DPCH, is dependent on whether the target cell is known for the UE or not.

If FDD/TDD handover is commanded, the interruption time shall be less than,

$$T_{interrupt} = T_{offset} + T_{UL} + 30*F_{SFN} + 20*KC + 180*UC + 10*F_{max} ms$$

where,

$T_{ m offset}$	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel
$T_{UL}$	Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell
$F_{SFN}$	Equal to 1 if SFN decoding is required and equal to 0 otherwise
KC	Equal to 1 if a known target cell is indicated in the RRC message implying FDD/TDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying FDD/TDD handover and equal to 0 otherwise

 $\underline{F_{max}}$  denotes the maximum number of radio frames within the transmission time intervals of all transport channels that are multiplexed into the same CCTrCH.

An inter-frequency TDD target cell shall be considered known by the UE, if the target cell has been measured by the UE during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

## A.5.3 FDD/TDD Handover

## A.5.3.1 Test purpose and Environment

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CA, A.5.0CB and A.5.0CC below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CA: General test parameters for FDD/TDD handover

Parai	meter	Unit	Value	Comment
DCH par	rameters		DL and UL Reference	As specified in TS 25.101 section A.3.1
			Measurement Channel 12.2 kbps	and in TS 25.102 section A.2.2
Power	Control		On	
	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 2	TDD cell
(	Ó		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	
	non-used ency	dBm	-75	Applicable for Event 2C
Filter co	efficient		0	
Monitored	Monitored cell list size		6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test
T	T1		5	
T	2	S	15	
T	3	S	5	

Table A.5.0CB: Cell 1 specific test parameters for FDD/TDD handover

Unit	Cell 1		
	T1, T2	T3	
	Channel 1		
dB	-10		
dB	-12		
dB	-12		
dB	-15		
dB	Note 1 n.a.		
dB	Note 2		
dB	0		
dBm/3.84 MHz	-70		
dB	-13		
	AWGN		
	dB dB dB dB dB dB dB dB dB dB dB	T1, T2  Channel 1  dB -10 dB -12 dB -12 dB -15 dB Note 1 dB Note 2 dB  dB MHz dB -70 dB -13	

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.5.0CD: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit		Cell 2								
DL timeslot number		0		2			8				
		T1	T2	T3	T1	T2	T3	T1	T2	T3	
UTRA RF Channel Number						Channel 2					
P-CCPCH_Ec/lor	dB		-3			n.a.			n.a.		
PICH_Ec/Ior	dB		n.a.			n.a.			-3		
SCH_Ec/lor	dB		-9			n.a.			-9		
SCH_t <sub>offset</sub>	dB		5		n.a.			5			
DPCH_Ec/lor	dB		n.a.		n.a. Note 1			n.a.			
OCNS_Ec/lor	dB		-3.12		0 Note 2			-3.12			
$\hat{I}_{or}/I_{oc}$	dB	-Inf		6	-Inf		6	-Inf	(	6	
P-CCPCH RSCP	dBm	-Inf -67 n.a.				n.a.					
$I_{oc}$	dBm/ 3,84 MHz	-70									
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 lor.

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.5.3.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 70-110 ms from the beginning of time period T3.

The rate of correct FDD/TDD handovers observed during repeated tests shall be at least 90%.

# 3GPP TSG RAN WG4 (Radio) Meeting #26

R4-030013

Madrid, Spain 17 - 22 February, 2003

		CHANG	E REQI	JEST			CR-Form-v7
×	25.	.133 CR 511	<b>≋rev</b>	¥	Current versi	4.7.0	#
For <u>HELP</u> on us	ing t	his form, see bottom of ti	his page or lo	ook at the	pop-up text	over the ঋ syr	nbols.
Proposed change a	ffect	ts: UICC apps第 <mark>一</mark>	ME X	Radio Ad	ccess Networ	k X Core Ne	etwork
Title: ∺	Cor	rection of interruption tim	e in FDD/TD	D Hard H	Handover		
Source: #	RAI	N WG4					
Work item code: ₩	TEI				Date: ℜ	05/03/2003	
I	Use of Detail be fo	one of the following categor  F (correction)  A (corresponds to a correct  B (addition of feature),  C (functional modification of the abound in 3GPP TR 21.900.	tion in an earling feature)  ve categories  elay uncerta	can inty of the	Use <u>one</u> of the up of the		ot taken
		into consideration. The ti- aligned in this test case cell1 and cell2 isn't align the given test requireme DCH occurs to align the uplink TTI boundary of the the interruption time.  The transmission delay maximum uplink TTI bo	described in ed, uplink D0 nt. The trans timing of upl ne target cell to align the	TS25.123 CCH may mission of ink DCH to This del	3 A5.1. If the root be able to delay of a matransmission ay isn't taken uplink DCH to	timing of CFN to be transmitted with the maxin into considerations.	between ed within he uplink num tion with
Summary of change	e: X	To add the maximum T To define DCH parame This changes are made cases.	ter as UL Re	ference N	Measurement	Channel 12.2	
Consequences if not approved:	ж	Even "Good UE" may n the uplink TTI boundary	•	est. The	UE may not to	ransmit uplink	DCH at
Clauses affected:	$\aleph$	5.3, A.5					
Other specs affected:	¥	Y N Other core specification X O&M Specification	S	<b>34.12</b>	21		
Other comments:	$\aleph$	Equivalent CRs in other	r Releases: (	CR510 ca	nt. F to 25.133	3 v3.12.0, CR5	12 cat. A

#### to 25.133 v5.5.0, CR513 cat. A to 25.133 v6.0.0

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## 5.3 FDD/TDD Handover

### 5.3.1 Introduction

The purpose of FDD/TDD handover is to change the radio access mode from FDD to TDD. The FDD/TDD handover procedure is initiated from UTRAN with a RRC message that implies a hard handover, as described in [16].

## 5.3.2 Requirements

The requirements in this section shall apply to UE supporting FDD and TDD.

## 5.3.2.1 FDD/TDD handover delay

RRC procedure performance values for all RRC procedures that can command a hard handover are specified in [16].

When the UE receives a RRC message implying FDD/TDD handover with the activation time "now" or earlier than  $D_{handover}$  seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH within  $D_{handover}$  seconds from the end of the last TTI containing the RRC command.

If the access is delayed to an indicated activation time later than  $D_{handover}$  seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH at the designated activation time.

where:

 $D_{handover}$  equals the RRC procedure performance value as defined in [16] plus the interruption time stated in section 5.3.2.2.

#### 5.3.2.2 Interruption time

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DPDCH and the time the UE starts transmission of the new uplink DPCH, is dependent on whether the target cell is known for the UE or not

If FDD/TDD handover is commanded, the interruption time shall be less than,

$$T_{interrupt} = T_{offset} + T_{UL} + 30*F_{SFN} + 20*KC + 180*UC + 10*F_{max} ms$$

where,

$T_{offset}$	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel
$T_{UL}$	Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell
$F_{SFN}$	Equal to 1 if SFN decoding is required and equal to 0 otherwise
KC	Equal to 1 if a known target cell is indicated in the RRC message implying FDD/TDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying FDD/TDD handover and equal to 0 otherwise

 $\underline{F_{max}}$  denotes the maximum number of radio frames within the transmission time intervals of all transport channels that are multiplexed into the same CCTrCH.

An inter-frequency TDD target cell shall be considered known by the UE, if the target cell has been measured by the UE during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

## A.5.3 FDD/TDD Handover

## A.5.3.1 Test purpose and Environment

## A.5.3.1.1 3.84 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CA, A.5.0CB and A.5.0CD below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CA: General test parameters for FDD/TDD handover

Parar	neter	Unit	Value	Comment
DCH par	ameters		DL and UL Reference	As specified in TS 25.101 section A.3.1
			Measurement Channel 12.2 kbps	and in TS 25.102 section A.2.2
Power	Control		On	
Target qual DT	ity value on CH	BLER	0.01	
Compress	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 2	TDD cell
C	Ó		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		dBm	-75	Applicable for Event 2C
Filter co	efficient		0	
Monitored of	Monitored cell list size		6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test
Т	1	S	5	
Т	2	S	15	
Т	3	S	5	

Table A.5.0CB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1			
		T1, T2	T3		
UTRA RF Channel Number		Channel 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	n.a.		
OCNS_Ec/lor	dB	Note 2			
$\hat{I}_{or}/I_{oc}$	dB	0			
$I_{oc}$	dBm/3.84 MHz	-70			
CPICH_Ec/Io	PICH_Ec/lo dB		-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  $I_{\rm or}$ 

Table A.5.0CC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2									
DL timeslot number			0		2			8			
		T1	T2	T3	T1	T2	T3	T1	T2	T3	
UTRA RF Channel						Chan	nol 2				
Number						Chan	IIEI Z				
P-CCPCH_Ec/lor	dB		-3			n.a.		n.a.			
PICH_Ec/lor	dB		n.a.			n.a.			-3		
SCH_Ec/lor	dB		-9		n.a.			-9			
SCH_t <sub>offset</sub>	dB		5		n.a.			5			
DPCH_Ec/lor	dB		n.a.		n.a. Note 1		n.a.				
OCNS_Ec/lor	dB		-3.12		0 Note 2		-3.12				
$\hat{I}_{or}/I_{oc}$	dB	-Inf	(	6	-Inf	nf 6		-Inf 6			
P-CCPCH RSCP	dBm	-Inf -67			n.a. n.a.						
$I_{oc}$ dBm/3,84 -70		n		•	•						
<sup>1</sup> oc MHz											
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 lor.

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.5.3.1.2 1.28 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CD, A.5.0CE and A.5.0CF below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CD: General test parameters for FDD/TDD handover

Parar	neter	Unit	Value	Comment
DCH par	ameters		DL and UL Reference	As specified in TS 25.101 section A.3.1
			Measurement Channel 12.2 kbps	and in TS 25.102 section A.2.2
Power	Control		On	
Target qual		BLER	0.01	
Compress	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 2	TDD cell
C	)	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		DBm	-75	Applicable for Event 2C
Filter co	efficient		0	
Monitored of	Monitored cell list size		6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test
	T1		5	
T.	2	S	15	
Т	3	S	5	

Table A.5.0CE: Cell 1 specific test parameters for FDD/TDD handover

Т3
n.a.

Note 1:

The DPCH level is controlled by the power control loop
The power of the OCNS channel that is added shall make the total
power from the cell to be equal to I<sub>or</sub> Note 2:

Table A.5.0CF: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	nit Cell 2					
DL timeslot number			0			S	
		T1	T2	T3	T1	T2	T3
UTRA RF Channel				Ch	annel 2		
Number				Ci	iaililei 2		
P-CCPCH_Ec/lor	dB		-3				
DwPCH _Ec/lor	dB						
DPCH_Ec/lor	dB					Note 1	
OCNS_Ec/lor	dB		-3				Note 2
$\hat{I}_{or}/I_{oc}$	dB	-Inf	(	6	-Inf		6
P-CCPCH RSCP	dBm	-Inf	-6	67			
I	dBm/1.28				-70		
$I_{oc}$	MHz				-70		
Propagation Condition			P	WGN			
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							

Note 2: The power of the OCNS channel that is added shall make the total

power from the cell to be equal to lor.

## A.5.3.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 110 70 ms from the beginning of time period T3.

The rate of correct FDD/TDD handovers observed during repeated tests shall be at least 90%.

# 3GPP TSG RAN WG4 (Radio) Meeting #26

R4-030014

Madrid, Spain 17 - 22 February, 2003

		CHANGE	REQ	UES	ST				CR-Form-v7
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For <u>HELP</u> on us	sing	this form, see bottom of this p	age or l	ook a	t the p	pop-up text	over th	e ≭ syr	nbols.
Proposed change a	affec	rts: UICC appsЖ	MEX	Radi	o Acc	cess Network	k X	Core Ne	etwork
Title: ♯	Co	rrection of interruption time in	FDD/T	DD Ha	ard Ha	andover			
Source: #	RA	N WG4							
Work item code: ₩	TE	I				Date: ♯	05/03	3/2003	
Category:	Use Deta	one of the following categories:  F (correction)  A (corresponds to a correction of B (addition of feature),  C (functional modification of feature)  D (editorial modification)  alieled explanations of the above categories	ature)			Use <u>one</u> of t 2 R96 R97 R98 R99 Rel-4 Rel-5	(GSM F (Releas (Releas (Releas	wing rele Phase 2) se 1996) se 1997) se 1998) se 4) se 5)	eases:
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Summary of chang	<b>e:</b> ૠ	To add the maximum TTI or To define DCH parameter a This changes are made for cases.	as UL Re	eferen	се М	easurement	Chani	nel 12.2	
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Clauses affected:	Ж	5.3, A.5							
Other specs affected:	¥	Y N X Other core specifications Test specifications O&M Specifications	ons	*	34.12°	1			
Other comments:	ж	Equivalent CRs in other Re	leases:	CR51	0 cat.	. F to 25.133	3 v3.12	.0, CR5	11 cat. A

#### to 25.133 v4.7.0, CR513 cat. A to 25.133 v6.0.0

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

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- 1) Fill out the above form. The symbols above marked \( \mathcal{H} \) 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

## 5.3 FDD/TDD Handover

### 5.3.1 Introduction

The purpose of FDD/TDD handover is to change the radio access mode from FDD to TDD. The FDD/TDD handover procedure is initiated from UTRAN with a RRC message that implies a hard handover as described in [16].

## 5.3.2 Requirements

The requirements in this section shall apply to UE supporting FDD and TDD.

#### 5.3.2.1 FDD/TDD handover delay

RRC procedure performance values for all RRC procedures, that can command a hard handover, are specified in [16].

When the UE receives a RRC message implying FDD/TDD handover with the activation time "now" or earlier than  $D_{handover}$  seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH within  $D_{handover}$  seconds from the end of the last TTI containing the RRC command.

If the access is delayed to an indicated activation time later than  $D_{handover}$  seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH at the designated activation time.

where:

 $D_{handover}$  equals the RRC procedure performance value as defined in [16] plus the interruption time stated in section 5.3.2.2.

#### 5.3.2.2 Interruption time

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DPDCH and the time the UE starts transmission of the new uplink DPCH, is dependent on whether the target cell is known for the UE or not.

If FDD/TDD handover is commanded, the interruption time shall be less than,

$$T_{interrupt} = T_{offset} + T_{UL} + 30*F_{SFN} + 20*KC + 180*UC + 10*F_{max} ms$$

where,

$T_{ m offset}$	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel
$T_{UL}$	Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell
$F_{SFN}$	Equal to 1 if SFN decoding is required and equal to 0 otherwise
KC	Equal to 1 if a known target cell is indicated in the RRC message implying FDD/TDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying FDD/TDD handover and equal to 0 otherwise

 $\underline{F_{max}}$  denotes the maximum number of radio frames within the transmission time intervals of all transport channels that are multiplexed into the same CCTrCH.

An inter-frequency TDD target cell shall be considered known by the UE, if the target cell has been measured by the UE during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

## A.5.3 FDD/TDD Handover

## A.5.3.1 Test purpose and Environment

## A.5.3.1.1 3.84 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CA, A.5.0CB and A.5.0CC below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CA: General test parameters for FDD/TDD handover

Parar	Parameter Unit Value			Comment		
DCH par	DCH parameters		DCH parameters		DL and UL Reference	As specified in TS 25.101 section A.3.1
-			Measurement Channel 12.2 kbps	and in TS 25.102 section A.2.2		
Power	Control		On			
	ity value on CH	BLER	0.01			
Compress	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	7.01.70 00.1		/ 10.110 00.11		Cell 2	TDD cell
(	Ö		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			
	non-used ency	dBm	-75	Applicable for Event 2C		
Filter co	efficient	efficient 0				
Monitored	Monitored cell list size		Monitored cell list size		6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test		
T	T1		5			
Т	2	S	15			
T	3	S	5			

Table A.5.0CB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1				
		T1, T2	T3			
UTRA RF Channel Number		Channel 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 n.				
OCNS_Ec/lor	dB	Note 2				
$\hat{I}_{or}/I_{oc}$	dB	0				
$I_{oc}$	dBm/3.84 MHz	-70				
CPICH_Ec/Io	dB	-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  $I_{\rm or}$ 

Table A.5.0CC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit		Cell 2								
DL timeslot number		0			2			8			
		T1	T2	T3	T1	T2	T3	T1	T2	T3	
UTRA RF Channel Number					Channel 2						
P-CCPCH_Ec/lor	dB		-3			n.a.		n.a.			
PICH_Ec/lor	dB		n.a.			n.a.			-3		
SCH_Ec/lor	dB		-9		n.a.			-9			
SCH_t <sub>offset</sub>	dB		5		n.a.			5			
DPCH_Ec/lor	dB		n.a.		n.a. Note 1		n.a.				
OCNS_Ec/lor	dB		-3.12		0 Note 2			-3.12			
$\hat{I}_{or}/I_{oc}$	dB	-Inf	(	6	-Inf 6		-Inf 6				
P-CCPCH RSCP	dBm	-Inf	-6	67	n.a. n.a.						
$I_{oc}$	dBm/3,84 MHz	-70									
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 lor.

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.5.3.1.2 1.28 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CD, A.5.0CE and A.5.0CF below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CD: General test parameters for FDD/TDD handover

Para	meter	Unit	Value	Comment
DCH pa	arameters		DL and UL Reference	As specified in TS 25.101 section A.3.1
			Measurement Channel 12.2	and in TS 25.102 section A.2.2
			kbps	
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	Active cell		Cell 2	TDD cell
condition				
	0		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	-75	Applicable for Event 2C
Filter co	oefficient		0	
Monitored	cell list size		6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
	Tsı		1.28	The value shall be used for all cells in the test
-	T1		5	
_	T2	S	15	
	Т3	S	5	

Table A.5.0CE: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1	
		T1, T2	T3
UTRA RF Channel Number		Channel 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	n.a.
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		AWGN	

Note 1:

The DPCH level is controlled by the power control loop
The power of the OCNS channel that is added shall make the total Note 2: power from the cell to be equal to  $I_{\rm or}$ 

Table A.5.0CF: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	nit Cell 2					
DL timeslot number			0			S	
		T1	T2	T3	T1	T2	T3
UTRA RF Channel				Ch	annel 2		
Number				Ci	iaililei 2		
P-CCPCH_Ec/lor	dB		-3				
DwPCH _Ec/lor	dB						
DPCH_Ec/lor	dB					Note 1	
OCNS_Ec/lor	dB		-3				Note 2
$\hat{I}_{or}/I_{oc}$	dB	-Inf	(	6	-Inf		6
P-CCPCH RSCP	dBm	-Inf	-6	67			
I	dBm/1.28				-70		
$I_{oc}$	MHz				-70		
Propagation Condition			P	WGN			
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							

Note 2: The power of the OCNS channel that is added shall make the total

power from the cell to be equal to lor.

## A.5.3.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 110 70 ms from the beginning of time period T3.

The rate of correct FDD/TDD handovers observed during repeated tests shall be at least 90%.

# 3GPP TSG RAN WG4 (Radio) Meeting #26

R4-030015

Madrid, Spain 17 - 22 February, 2003

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#### to 25.133 v4.7.0, CR512 cat. A to 25.133 v5.5.0

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

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

## 5.3 FDD/TDD Handover

### 5.3.1 Introduction

The purpose of FDD/TDD handover is to change the radio access mode from FDD to TDD. The FDD/TDD handover procedure is initiated from UTRAN with a RRC message that implies a hard handover as described in [16].

## 5.3.2 Requirements

The requirements in this section shall apply to UE supporting FDD and TDD.

#### 5.3.2.1 FDD/TDD handover delay

RRC procedure performance values for all RRC procedures, that can command a hard handover, are specified in [16].

When the UE receives a RRC message implying FDD/TDD handover with the activation time "now" or earlier than  $D_{handover}$  seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH within  $D_{handover}$  seconds from the end of the last TTI containing the RRC command.

If the access is delayed to an indicated activation time later than  $D_{handover}$  seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH at the designated activation time.

where:

 $D_{handover}$  equals the RRC procedure performance value as defined in [16] plus the interruption time stated in section 5.3.2.2.

#### 5.3.2.2 Interruption time

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DPDCH and the time the UE starts transmission of the new uplink DPCH, is dependent on whether the target cell is known for the UE or not.

If FDD/TDD handover is commanded, the interruption time shall be less than,

$$T_{interrupt} = T_{offset} + T_{UL} + 30*F_{SFN} + 20*KC + 180*UC + 10*F_{max} ms$$

where,

$T_{ m offset}$	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel
$T_{UL}$	Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell
$F_{SFN}$	Equal to 1 if SFN decoding is required and equal to 0 otherwise
KC	Equal to 1 if a known target cell is indicated in the RRC message implying FDD/TDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying FDD/TDD handover and equal to 0 otherwise

 $\underline{F_{max}}$  denotes the maximum number of radio frames within the transmission time intervals of all transport channels that are multiplexed into the same CCTrCH.

An inter-frequency TDD target cell shall be considered known by the UE, if the target cell has been measured by the UE during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

## A.5.3 FDD/TDD Handover

## A.5.3.1 Test purpose and Environment

## A.5.3.1.1 3.84 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CA, A.5.0CB and A.5.0CC below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CA: General test parameters for FDD/TDD handover

Parar	neter	Unit	Value	Comment
DCH par	ameters		DL and UL Reference	As specified in TS 25.101 section A.3.1
-			Measurement Channel 12.2 kbps	and in TS 25.102 section A.2.2
Power	Power Control		On	
	Target quality value on DTCH		0.01	
Compress	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 2	TDD 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	
	non-used ency	dBm	-75	Applicable for Event 2C
Filter co	efficient		0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
$T_{SI}$		S	1.28	The value shall be used for all cells in the test
T1		S	5	
Т	2	S	15	
T	3	S	5	

Table A.5.0CB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1				
		T1, T2	T3			
UTRA RF Channel Number		Channel 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	n.a.			
OCNS_Ec/lor	dB	Note 2				
$\hat{I}_{or}/I_{oc}$	dB	0				
$I_{oc}$	dBm/3.84 MHz	-70				
CPICH_Ec/Io	dB	-13				
Propagation Condition		AWGN	•			
Note 1: The DPCH lev	el 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.5.0CC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2								
DL timeslot number			0			2		8		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 2								
P-CCPCH_Ec/lor	dB		-3			n.a.			n.a.	
PICH_Ec/lor	dB		n.a.		n.a.			-3		
SCH_Ec/lor	dB		-9		n.a.			-9		
SCH_t <sub>offset</sub>	dB		5			n.a.		5		
DPCH_Ec/lor	dB		n.a.		n.	a.	Note 1		n.a.	
OCNS_Ec/lor	dB		-3.12		(	)	Note 2		-3.12	
$\hat{I}_{or}/I_{oc}$	dB	-Inf	-Inf 6 -Inf 6 -Inf		-Inf	(	3			
P-CCPCH RSCP	dBm	-Inf	-Inf -67 n.a.						n.a.	
$I_{oc}$	dBm/3,84 MHz	-70								
Propagation Condition			·			AW	GN			

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 lor.

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.5.3.1.2 1.28 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CD, A.5.0CE and A.5.0CF below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CD: General test parameters for FDD/TDD handover

Para	meter	Unit	Value	Comment
DCH pa	arameters		DL and UL Reference	As specified in TS 25.101 section A.3.1
			Measurement Channel 12.2	and in TS 25.102 section A.2.2
			kbps	
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	Active cell		Cell 2	TDD cell
condition				
	0		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	-75	Applicable for Event 2C
Filter co	oefficient		0	
Monitored	cell list size		6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test
T1		S	5	
_	T2	S	15	
	Т3	S	5	

Table A.5.0CE: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1	
		T1, T2	T3
UTRA RF Channel Number		Channel 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	n.a.
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		AWGN	

Note 1:

The DPCH level is controlled by the power control loop
The power of the OCNS channel that is added shall make the total Note 2: power from the cell to be equal to  $I_{\rm or}$ 

Table A.5.0CF: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2							
DL timeslot number			0			S			
		T1	T2	T3	T1	T2	T3		
UTRA RF Channel Number				Ch	annel 2				
P-CCPCH_Ec/lor	dB		-3						
DwPCH _Ec/lor	dB					0			
DPCH_Ec/lor	dB						Note 1		
OCNS_Ec/lor	dB		-3				Note 2		
$\hat{I}_{or}/I_{oc}$	dB	-Inf	(	6	-Inf		6		
P-CCPCH RSCP	dBm	-Inf	-6	67					
$I_{oc}$	dBm/1.28 MHz	-70							
Propagation Condition		AWGN					•		
Note 1: The DPCH le									

Note 2: The power of the OCNS channel that is added shall make the total

power from the cell to be equal to lor.

## A.5.3.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 11070 ms from the beginning of time period T3.

The rate of correct FDD/TDD handovers observed during repeated tests shall be at least 90%.

# 3GPP TSG RAN WG4 (Radio) Meeting #26

R4-030021

# Madrid, Spain 17 - 22 February, 2003

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For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the <b>%</b> symbols.												
Proposed chang	je a	affects	s: (	JICC a	apps#	IV	IE <mark>X</mark> Ra	dio Ac	cess Netwo	rk	Core Net	work
Title:	$\mathfrak{R}$	Appl	icabil	ity of 7	Fimer T-resel	ection	for 2G ce	ell rese	election.			
Source:	$\mathfrak{H}$	RAN	l WG	4								
Work item code:	: #	TEI							Date: ℜ	05/	03/2003	
Category:	$\mathfrak{X}$	Use <u>o.</u> F A B	(corr (corr (add (fun	rection) respon dition of ctional	owing categori ds to a correct f feature), modification o	tion in a		release,	2	the for (GSN (Rele (Rele (Rele	9 M Phase 2) Pase 1996) Pase 1997) Pase 1998) Pase 1999)	ases:

Detailed explanations of the above categories can

be found in 3GPP TR 21.900.

#### Reason for change: #

The timer T reselection is used, in the current version of this specification, for the duration of the estimation of the cell reselection criteria, towards a 3G cell and not used for a cell reselection towards a 2G cell.

Rel-4

Rel-5

(Release 4)

(Release 5)

(Release 6)

This Cr proposes the extension of the potential use of this timer for the 2G cell reselection in order to avoid a biased situation while the UE is considering cell reselection in a mixed 2G/3G environment

This correction is in line with the 25.304. This specification states that (5.2.6.1.4)

<u>In all cases</u>, the UE shall reselect the new cell, only if the following conditions are met:

- the new cell is better ranked than the serving cell during a time interval Treselection.
- more than 1 second has elapsed since the UE camped on the current serving cell.

The first condition of the 25.304 is missing for the 2G cell reselection case in the 25.133.

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- Addition of the same sentence already used for 3G cell reselection, for the 2G cell reselection case in sub 4.2.2.5 in order to introduce T reselection for GSM case.
- As the wording "ranked" is used into the 25.133, a reference to the 25.304 is

Clauses affected: Other specs affected:	# 4.2.2.5; 4.2.2.6  Y N  Continuous de la companyation of the core specifications of the core specification of the core sp
Other comments:	# Equivalent CRs in other Releases: CR515 cat. A to 25.133 v4.7.0, CR516 cat. A to 25.133 v5.5.0, CR517 cat. A to 25.133 v6.0.0

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## 4.2.2 Requirements

## 4.2.2.1 Measurement and evaluation of cell selection criteria S of serving cell

The UE shall measure the CPICH Ec/Io and CPICH RSCP level of the serving cell and evaluate the cell selection criterion S defined in [1] for the serving cell at least every DRX cycle. The UE shall filter the CPICH Ec/Io and CPICH RSCP measurements of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureFDD}/2$  (see table 4.1).

If the UE has evaluated in  $N_{\text{serv}}$  consecutive DRX cycles that the serving cell does not fulfil the cell selection criterion S, the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities.

If the UE has not found any new suitable cell based on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in [1]

After this 12 s period a UE in Cell:PCH or URA\_PCH is considered to be "out of service area" and shall perform actions according to 25.331.

#### 4.2.2.2 Measurements of intra-frequency cells

The UE shall measure CPICH Ec/Io and CPICH RSCP at least every  $T_{measureFDD}$  (see table 4.1) for intra-frequency cells that are identified and measured according to the measurement rules.  $T_{measureFDD}$  is defined in Table 4.1. The UE shall filter CPICH Ec/Io and CPICH RSCP measurements of each measured intra-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureFDD}/2$ .

The filtering shall be such that the UE shall be capable of evaluating that an intra-frequency cell has become better ranked than the serving cell within  $T_{\text{evaluateFDD}}$  (see table 4.1), from the moment the intra-frequency cell became at least 3 dB better ranked than the current serving cell, provided that Treselection timer is set to zero and either CPICH Ec/Io or CPICH RSCP is used as measurement quantity for cell reselection.

If Treselection timer has a non zero value and the intra-frequency cell is better ranked than the serving cell, the UE shall evaluate this intra-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

#### 4.2.2.3 Measurements of inter-frequency FDD cells

The UE shall measure CPICH Ec/Io and CPICH RSCP at least every ( $N_{carrier}$ -1) \*  $T_{measureFDD}$  (see table 4.1) for interfrequency cells that are identified and measured according to the measurement rules. The parameter  $N_{carrier}$  is the number of carriers used for FDD cells. The UE shall filter CPICH Ec/Io and CPICH RSCP measurements of each measured inter-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureFDD}/2$ .

If CPICH Ec/Io is used as measurement quantity for cell reselection, the filtering shall be such that the UE shall be capable of evaluating that an already identified inter-frequency cell has become better ranked than the serving cell within  $(N_{carrier}-1) * T_{evaluateFDD}$  (see table 4.1) from the moment the inter-frequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

If CPICH RSCP is used as measurement quantity for cell reselection, the filtering shall be such that the UE shall be capable of evaluating that an already identified inter-frequency cell has become better ranked than the serving cell within  $(N_{carrier}-1) * T_{evaluateFDD}$  from the moment the inter-frequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

### 4.2.2.4 Measurements of inter-frequency TDD cells

The requirements in this section shall apply to UE supporting FDD and TDD.

The UE shall measure P-CCPCH RSCP at least every  $N_{carrierTDD}$  \*  $T_{measureTDD}$  (see table 4.1) for inter-frequency TDD cells that are identified and measured according to the measurement rules. The parameter  $N_{carrierTDD}$  is the number of carriers used for inter-frequency TDD cells. The UE shall filter P-CCPCH RSCP measurements of each measured inter-frequency TDD cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureTDD}/2$ .

The filtering of P-CCPCH RSCP shall be such that the UE shall be capable of evaluating that an already identified inter-frequency TDD cell has become better ranked than the serving cell within  $N_{carrierTDD}^*$   $T_{evaluateTDD}$  from the moment the inter-frequency TDD cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency TDD cells, the filtering shall be such that the UE shall be capable of evaluating that an inter-frequency TDD cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency TDD cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency TDD cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency TDD cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

#### 4.2.2.5 Measurements of inter-RAT GSM cells

The UE shall measure the signal level of the GSM BCCH carrier of each GSM neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in TS25.304, at least every  $T_{measureGSM}$  (see table 4.1). The UE shall maintain a running average of 4 measurements for each GSM BCCH carrier. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measuremenst are required by the measurement rules in [1], the UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell reselection criteria defined in [1]. If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

If the UE detects a BSIC, which is not indicated in the measurement control system information, the UE shall not consider that GSM BCCH carrier in cell reselection. The UE also shall not consider the GSM BCCH carrier in cell reselection, if the UE cannot demodulate the BSIC of that GSM BCCH carrier.

If Treselection timer has a non zero value and the inter-RAT GSM cell is better ranked than the serving cell, the UE shall evaluate this inter-RAT GSM cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

#### 4.2.2.6 Evaluation of cell re-selection criteria

The UE shall evaluate the cell re-selection criteria defined in [1] for the cells, which have new measurement results available, at least every DRX cycle.

UE shall perform cell reselection immediately after the UE has found a higher ranked suitable cell, unless less than 1 second has elapsed from the moment the UE started camping on the serving cell. The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304.

# 3GPP TSG RAN WG4 (Radio) Meeting #26

UICC apps₩

R4-030022

ME X Radio Access Network Core Network

Rel-6 (Release 6)

## Madrid, Spain 17 - 22 February, 2003

	CHANGE REQUEST							
ж	25.133 C	R 515	жrev	ж	Current version:	4.7.0	¥	
For <u>HEL</u>	.P on using this form,	see bottom o	of this page or loo	k at th	ne pop-up text over	the ¥ syr	nbols.	

Title:	$\mathbb{H}$	Applicability of Timer T-reselection for 2G cell rese	election.	
Source:	$\mathbb{H}$	RAN WG4		
Work item code	:₩	TEI	Date: ₩	05/03/2003
Category:	$\mathfrak{R}$	A	Release: ₩	Rel-4
		Use <u>one</u> of the following categories:	Use <u>one</u> of	the following releases:
		<b>F</b> (correction)	2	(GSM Phase 2)
		A (corresponds to a correction in an earlier release)	R96	(Release 1996)
		<b>B</b> (addition of feature),	R97	(Release 1997)
		C (functional modification of feature)	R98	(Release 1998)
		<b>D</b> (editorial modification)	R99	(Release 1999)
		Detailed explanations of the above categories can	Rel-4	(Release 4)
		be found in 3GPP <u>TR 21.900</u> .	Rel-5	(Release 5)

#### Reason for change: #

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Clauses affected:	<b>3.</b> 4.2.2.5; 4.2.2.6
Other specs affected:	Y N  Contractions  Test specifications O&M Specifications
Other comments:	lpha
	Equivalent CRs in other Releases: CR514 cat. F to 25.133 v3.12.0, CR516 cat. A to 25.133 v5.5.0, CR517 cat. A to 25.133 v6.0.0

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# 3GPP TSG RAN WG4 (Radio) Meeting #26

UICC apps₩

R4-030023

Core Network

## Madrid, Spain 17 - 22 February, 2003

CHANGE REQUEST								CR-Form-v7	
ж	25.133	CR 5	16	жrev		¥	Current version:	5.5.0	ж
For <u>HE</u>	<b>ELP</b> on using this for	m, see b	oottom of this	page or l	look a	at th	e pop-up text over	the % syr	nbols.

ME X Radio Access Network

Title:	$\mathfrak{H}$	Applicability of Timer T-reselection for 2G co	ell rese	lection.	
Source:	æ	RAN WG4			
Source.	00	MAIN WO4			
Work item code:	:Ж	TEI		Date: ♯	05/03/2003
• .				<b>-</b>	5.15
Category:	$\mathfrak{R}$	A		Release: ₩	Rel-5
		Use <u>one</u> of the following categories:		Use <u>one</u> of t	the following releases:
		<b>F</b> (correction)		2	(GSM Phase 2)
		A (corresponds to a correction in an earlier r	release)	R96	(Release 1996)
		<b>B</b> (addition of feature),	,		(Release 1997)
		C (functional modification of feature)		R98	(Release 1998)
		<b>D</b> (editorial modification)		R99	(Release 1999)
		Detailed explanations of the above categories car	1	Rel-4	(Release 4)
		be found in 3GPP TR 21.900.		Rel-5	(Release 5)
				Rel-6	(Release 6)

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The timer T reselection is used, in the current version of this specification, for the duration of the estimation of the cell reselection criteria, towards a 3G cell and not used for a cell reselection towards a 2G cell.

This Cr proposes the extension of the potential use of this timer for the 2G cell reselection in order to avoid a biased situation while the UE is considering cell reselection in a mixed 2G / 3G environment

This correction is in line with the 25.304. This specification states that (5.2.6.1.4)

In all cases, the UE shall reselect the new cell, only if the following conditions are met:

- the new cell is better ranked than the serving cell during a time interval Treselection.
- more than 1 second has elapsed since the UE camped on the current serving

The first condition of the 25.304 is missing for the 2G cell reselection case in the 25.133.

#### Summary of change: ₩

- Addition of the same sentence already used for 3G cell reselection, for the 2G cell reselection case in sub 4.2.2.5 in order to introduce T reselection for GSM case.
- As the wording "ranked" is used into the 25.133, a reference to the 25.304 is

Clauses affected: Other specs affected:	# 4.2.2.5; 4.2.2.6    Y   N
Other comments:	# Equivalent CRs in other Releases: CR514 cat. F to 25.133 v3.12.0, CR515 cat. A to 25.133 v4.7.0, CR517 cat. A to 25.133 v6.0.0

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## 4.2.2 Requirements

### 4.2.2.1 Measurement and evaluation of cell selection criteria S of serving cell

The UE shall measure the CPICH Ec/Io and CPICH RSCP level of the serving cell and evaluate the cell selection criterion S defined in [1] for the serving cell at least every DRX cycle. The UE shall filter the CPICH Ec/Io and CPICH RSCP measurements of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureFDD}/2$  (see table 4.1).

If the UE has evaluated in  $N_{\text{serv}}$  consecutive DRX cycles that the serving cell does not fulfil the cell selection criterion S, the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities.

If the UE has not found any new suitable cell based on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in [1].

After this 12 s period a UE in Cell:PCH or URA\_PCH is considered to be "out of service area" and shall perform actions according to 25.331.

### 4.2.2.2 Measurements of intra-frequency cells

The UE shall measure CPICH Ec/Io and CPICH RSCP at least every  $T_{measureFDD}$  (see table 4.1) for intra-frequency cells that are identified and measured according to the measurement rules.  $T_{measureFDD}$  is defined in Table 4.1. The UE shall filter CPICH Ec/Io and CPICH RSCP measurements of each measured intra-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureFDD}/2$ .

The filtering shall be such that the UE shall be capable of evaluating that an intra-frequency cell has become better ranked than the serving cell within  $T_{\text{evaluateFDD}}$  (see table 4.1), from the moment the intra-frequency cell became at least 3 dB better ranked than the current serving cell, provided that Treselection timer is set to zero and either CPICH Ec/Io or CPICH RSCP is used as measurement quantity for cell reselection.

If Treselection timer has a non zero value and the intra-frequency cell is better ranked than the serving cell, the UE shall evaluate this intra-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

### 4.2.2.3 Measurements of inter-frequency FDD cells

The UE shall measure CPICH Ec/Io and CPICH RSCP at least every ( $N_{carrier}$ -1) \*  $T_{measureFDD}$  (see table 4.1) for interfrequency cells that are identified and measured according to the measurement rules. The parameter  $N_{carrier}$  is the number of carriers used for FDD cells. The UE shall filter CPICH Ec/Io and CPICH RSCP measurements of each measured inter-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureFDD}/2$ .

If CPICH Ec/Io is used as measurement quantity for cell reselection, the filtering shall be such that the UE shall be capable of evaluating that an already identified inter-frequency cell has become better ranked than the serving cell within  $(N_{carrier}-1) * T_{evaluateFDD}$  (see table 4.1) from the moment the inter-frequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

If CPICH RSCP is used as measurement quantity for cell reselection, the filtering shall be such that the UE shall be capable of evaluating that an already identified inter-frequency cell has become better ranked than the serving cell within  $(N_{carrier}-1) * T_{evaluateFDD}$  from the moment the inter-frequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

### 4.2.2.4 Measurements of inter-frequency TDD cells

The requirements in this section shall apply to UE supporting FDD and TDD.

The UE shall measure P-CCPCH RSCP at least every  $N_{carrierTDD}$  \*  $T_{measureTDD}$  (see table 4.1) for inter-frequency TDD cells that are identified and measured according to the measurement rules. The parameter  $N_{carrierTDD}$  is the number of carriers used for inter-frequency TDD cells. The UE shall filter P-CCPCH RSCP measurements of each measured inter-frequency TDD cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureTDD}/2$ .

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency TDD cell has become better ranked than the serving cell within  $N_{carrierTDD}^*$   $T_{evaluateTDD}$  from the moment the inter-frequency TDD cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency TDD cells, the filtering shall be such that the UE shall be capable of evaluating that an inter-frequency TDD cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency TDD cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency TDD cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency TDD cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

### 4.2.2.5 Measurements of inter-RAT GSM cells

The UE shall measure the signal level of the GSM BCCH carrier of each GSM neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in [1], at least every  $T_{measureGSM}$  (see table 4.1). The UE shall maintain a running average of 4 measurements for each GSM BCCH carrier. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measuremenst are required by the measurement rules in [1], the UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell reselection criteria defined in [1]. If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

If the UE detects a BSIC, which is not indicated in the measurement control system information, the UE shall not consider that GSM BCCH carrier in cell reselection. The UE also shall not consider the GSM BCCH carrier in cell reselection, if the UE cannot demodulate the BSIC of that GSM BCCH carrier.

If Treselection timer has a non zero value and the inter-RAT GSM cell is better ranked than the serving cell, the UE shall evaluate this inter-RAT GSM cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

### 4.2.2.6 Evaluation of cell re-selection criteria

The UE shall evaluate the cell re-selection criteria defined in TS 25.304 for the cells, which have new measurement results available, at least every DRX cycle.

UE shall perform cell reselection immediately after the UE has found a higher ranked suitable cell, unless less than 1 second has elapsed from the moment the UE started camping on the serving cell. The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304.

## 3GPP TSG RAN WG4 (Radio) Meeting #26

R4-030024

(Release 6)

Rel-5 Rel-6

## Madrid, Spain 17 - 22 February, 2003

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### Reason for change: #

The timer T reselection is used, in the current version of this specification, for the duration of the estimation of the cell reselection criteria, towards a 3G cell and not used for a cell reselection towards a 2G cell.

This Cr proposes the extension of the potential use of this timer for the 2G cell reselection in order to avoid a biased situation while the UE is considering cell reselection in a mixed 2G / 3G environment

This correction is in line with the 25.304. This specification states that (5.2.6.1.4)

In all cases, the UE shall reselect the new cell, only if the following conditions are met:

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The first condition of the 25.304 is missing for the 2G cell reselection case in the 25.133.

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- Addition of the same sentence already used for 3G cell reselection, for the 2G cell reselection case in sub 4.2.2.5 in order to introduce T reselection for GSM
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Clauses affected: Other specs affected:	# 4.2.2.5; 4.2.2.6  Y N  # Other core specifications Test specifications O&M Specifications
Other comments:	# Equivalent CRs in other Releases: CR514 cat. F to 25.133 v3.12.0, CR515 cat. A to 25.133 v4.7.0, CR516 cat. A to 25.133 v5.5.0

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## 4.2.2 Requirements

### 4.2.2.1 Measurement and evaluation of cell selection criteria S of serving cell

The UE shall measure the CPICH Ec/Io and CPICH RSCP level of the serving cell and evaluate the cell selection criterion S defined in [1] for the serving cell at least every DRX cycle. The UE shall filter the CPICH Ec/Io and CPICH RSCP measurements of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureFDD}/2$  (see table 4.1).

If the UE has evaluated in  $N_{\text{serv}}$  consecutive DRX cycles that the serving cell does not fulfil the cell selection criterion S, the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities.

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After this 12 s period a UE in Cell:PCH or URA\_PCH is considered to be "out of service area" and shall perform actions according to 25.331.

### 4.2.2.2 Measurements of intra-frequency cells

The UE shall measure CPICH Ec/Io and CPICH RSCP at least every  $T_{measureFDD}$  (see table 4.1) for intra-frequency cells that are identified and measured according to the measurement rules.  $T_{measureFDD}$  is defined in Table 4.1. The UE shall filter CPICH Ec/Io and CPICH RSCP measurements of each measured intra-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureFDD}/2$ .

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If Treselection timer has a non zero value and the intra-frequency cell is better ranked than the serving cell, the UE shall evaluate this intra-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

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### 4.2.2.4 Measurements of inter-frequency TDD cells

The requirements in this section shall apply to UE supporting FDD and TDD.

The UE shall measure P-CCPCH RSCP at least every  $N_{carrierTDD}$  \*  $T_{measureTDD}$  (see table 4.1) for inter-frequency TDD cells that are identified and measured according to the measurement rules. The parameter  $N_{carrierTDD}$  is the number of carriers used for inter-frequency TDD cells. The UE shall filter P-CCPCH RSCP measurements of each measured inter-frequency TDD cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureTDD}/2$ .

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency TDD cell has become better ranked than the serving cell within  $N_{carrierTDD}^*$   $T_{evaluateTDD}$  from the moment the inter-frequency TDD cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency TDD cells, the filtering shall be such that the UE shall be capable of evaluating that an inter-frequency TDD cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency TDD cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

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If GSM measuremenst are required by the measurement rules in [1], the UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell reselection criteria defined in [1]. If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

If the UE detects a BSIC, which is not indicated in the measurement control system information, the UE shall not consider that GSM BCCH carrier in cell reselection. The UE also shall not consider the GSM BCCH carrier in cell reselection, if the UE cannot demodulate the BSIC of that GSM BCCH carrier.

If Treselection timer has a non zero value and the inter-RAT GSM cell is better ranked than the serving cell, the UE shall evaluate this inter-RAT GSM cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

### 4.2.2.6 Evaluation of cell re-selection criteria

The UE shall evaluate the cell re-selection criteria defined in TS 25.304 for the cells, which have new measurement results available, at least every DRX cycle.

UE shall perform cell reselection immediately after the UE has found a higher ranked suitable cell, unless less than 1 second has elapsed from the moment the UE started camping on the serving cell. The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304.

# 3GPP TSG RAN WG4 (Radio) Meeting #26

R4-030076

Madrid, Spain 17 - 22 February, 2003

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## A.5.2 FDD/FDD Hard Handover

## A.5.2.1 Handover to intra-frequency cell

### A.5.2.1.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the hard handover delay in CELL\_DCH state in the single carrier case reported in section 5.2.2.1.

The test parameters are given in Table A.5.0 and A.5.0A below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed timed difference shall be reported together with Event 1A. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time "now" at the beginning of T3-with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

Table A.5.0: General test parameters for Handover to intra-frequency cell

Par	ameter	Unit	Value	Comment
DCH parameter	DCH parameters		DL and UL Reference	As specified in TS 25.101 section
-			Measurement Channel 12.2 kbps	A.3.1 and A.2.1
Power Control			On	
Target quality va	alue on DTCH	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range	)	dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deact	ivation threshold		0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		S	5	
T2		S	5	
T3		S	5	

Table A.5.0A: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	Cell 1				Cell 2	
		T1	T2	T3	T1	T2	T3
CPICH_Ec/lor	dB		-10			-10	
PCCPCH_Ec/lo	dB		-12			-12	
r							
SCH_Ec/lor	dB		-12			-12	
PICH_Ec/lor	dB		-15		-15		
DPCH_Ec/lor	dB	Note1	Note1	Note3	N/A	N/A	Note1
OCNS		Note2	Note2	Note2	-0.941	-0.941	Note2
$\hat{I}_{or}/I_{oc}$	dB	0	6.	97	-Infinity	5.	97
$I_{oc}$	dBm/3.84 MHz			-	70		
CPICH_Ec/lo	dB	-13 -Infinity -14				4	
Propagation Condition		AWGN					
Note 1: The DI	PCH level is	controlled by th	ne power contro	l loop			

The power of the OCNS channel that is added shall make the total power from the cell to be equal to  $I_{or}$ Note 2:

The DPCH may not be power controlled by the power control loop. Note 3:

#### A.5.2.1.2 **Test Requirements**

The UE shall start to transmit the UL DPCCH to Cell 2 less than 110 ms from the beginning of time period T3.

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

## A.5.2.2 Handover to inter-frequency cell

#### A.5.2.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the inter frequency hard handover delay in CELL\_DCH state as specified in section 5.2.2.1.

The test consists of three successive time periods, with a time duration T1, T2 and T3. The test parameters are given in tables A.5.0B and A.5.0C 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. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time "now" at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

Table A.5.0B: General test parameters for Handover to inter-frequency cell

Para	meter	Unit	Value	Comment
DCH parameters	DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and A.2.1
Power Control			On	
Target quality val	ue on DTCH	BLER	0.01	
Compressed mod	de		A.22 set 1	As specified in TS 25.101 section A.5.
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold non us	ed frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range		dB	4	Applicable for event 1A
Hysteresis		dB	0	
W			1	Applicable for event 1A
W non-used frequ	uency		1	Applicable for event 2C
Reporting deactive	ation threshold		0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1	T1		5	
T2		S	10	
T3		S	5	

Table A.5.0C: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1				Cell 2	
		T1	T2	T3	T1	T2	T3
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	Note 1	Note3	N/A	N/A	Note 1
OCNS			Note 2		-0.941	-0.941	Note 2
$\hat{I}_{or}/I_{oc}$	dB		0		-Infinity	-1.8	-1.8
$I_{oc}$	dBm/3.84 MHz	-70					
CPICH_Ec/Io	dB	-13			-Infinity	-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<sub>or</sub>

Note 3: The DPCH may not be power controlled by the power control loop.

### A.5.2.2.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 140 ms from the beginning of time period T3.

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

## A.5.3 FDD/TDD Handover

## A.5.3.1 Test purpose and Environment

### A.5.3.1.1 3.84 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CA, A.5.0CB and A.5.0CC below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time "now" at the beginning of T3-with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16]. such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CA: General test parameters for FDD/TDD handover

Parai	meter	Unit	Value	Comment
DCH pa	DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2.2
Power	Control		On	
	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 2	TDD 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	
	non-used ency	dBm	-75	Applicable for Event 2C
Filter co	efficient		0	
Monitored	Monitored cell list size		6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
$T_{Sl}$		S	1.28	The value shall be used for all cells in the test
Т	1	S	5	
Т	2	S	15	
T	3	S	5	

Table A.5.0CB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1			
		T1, T2	T3		
UTRA RF Channel Number		Channel 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	n.a.		
OCNS_Ec/lor	dB	Note 2			
$\hat{I}_{or}/I_{oc}$	dB	0			
$I_{oc}$	dBm/3.84 MHz	-70			
CPICH_Ec/Io	dB	-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  $I_{\rm or}$ 

Table A.5.0CC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit		Cell 2								
DL timeslot number			0		2			8			
		T1	T2	T3	T1	T2	T3	T1	T2	T3	
UTRA RF Channel						Chan	nol 2				
Number						Chan	HEI Z				
P-CCPCH_Ec/lor	dB		-3			n.a.			n.a.		
PICH_Ec/lor	dB		n.a.			n.a.			-3		
SCH_Ec/lor	dB		-9		n.a.			-9			
SCH_t <sub>offset</sub>	dB		5		n.a.			5			
DPCH_Ec/lor	dB		n.a.		n.a. Note 1		n.a.				
OCNS_Ec/lor	dB		-3.12		0 Note 2		-3.12				
$\hat{I}_{or}/I_{oc}$	dB	-Inf	(	6	-Inf	nf 6		-Inf	6	6	
P-CCPCH RSCP	dBm	-Inf -67			n.a.			n.a.			
$I_{oc}$	dBm/3,84	-70									
oc	MHz	-10									
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 lor.

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.5.3.1.2 1.28 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CD, A.5.0CE and A.5.0CF below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CD: General test parameters for FDD/TDD handover

Para	Parameter		Value	Comment
DCH pa	DCH parameters		DL Reference Measurement	As specified in TS 25.101 section A.3.1
			Channel 12.2 kbps	and in TS 25.102 section A.2.2
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 2	TDD 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	-75	Applicable for Event 2C
Filter co	oefficient		0	
Monitored	cell list size		6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test
T1		S	5	
-	Γ2	S	15	
-	Г3	S	5	

Table A.5.0CE: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1		
		T1, T2	Т3	
UTRA RF Channel Number		Channel 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	n.a.	
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		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<sub>or</sub>

Table A.5.0CF: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2					
DL timeslot number		0			DwPTs		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel				Ch	annel 2		
Number				Ci	iaililei Z		
P-CCPCH_Ec/lor	dB		-3				
DwPCH _Ec/lor	dB	0					
DPCH_Ec/lor	dB						Note 1
OCNS_Ec/lor	dB	-3				Note 2	
$\hat{I}_{or}/I_{oc}$	dB	-Inf 6		-Inf		6	
P-CCPCH RSCP	dBm	-Inf	-6	67			
I	dBm/1.28				-70		
$I_{oc}$	MHz	-70					
Propagation Condition		AWGN					
Note 1: The DPCH le	vel is control	led by t	he pow	er con	trol loop	•	•
Note 2: The power of	the OCNS c	hannel	that is	added	shall ma	ke the to	otal

Note 2: The power of the OCNS channel that is added shall make the total

power from the cell to be equal to lor.

## A.5.3.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 70 ms from the beginning of time period T3.

The rate of correct FDD/TDD handovers observed during repeated tests shall be at least 90%.

## A.5.4 Inter-system Handover from UTRAN FDD to GSM

## A.5.4.1 Test Purpose and Environment

This test is to verify the requirement for the UTRAN to GSM cell handover delay reported in section 5.4.2.1.

The test parameters are given in Table A.5.0D, A.5.0E and A.5.0F below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used.. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Handover from UTRAN command with activation time "now" at beginning of T3 with a new active cell, cell 2. In GSM Handover command contained in that message, IE starting time shall not be included. . The RRC HANDOVER FROM UTRAN COMMAND message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

The requirements are also applicable for a UE not requiring compressed mode, in which case no compresed mode pattern should be sent for the parameters specifed in table A5.0D

Table A.5.0D: General test parameters for Correct reporting of GSM neighbours in AWGN 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	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI			Only applicable for UE requiring compressed mode patterns
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		Dette va 2	As an asified in agetical 0.4.2.5.2.4 table
identification		Pattern 2	As specified in section 8.1.2.5.2.1 table 8.7.
- GSM BSIC re- confirmation		Pattern 2	As specified in section 8.1.2.5.2.2 table 8.8.
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		24 FDD neighbours on Channel 1	Measurement control information is
size		6 GSM neighbours including ARFCN 1	sent before the compressed mode patterns starts.
N Identify abort		66	Taken from table 8.7.
T Reconfirm abort		5.5	Taken from table 8.8.
T1	S	20	
T2	S	5	
T3	S	5	

Table A.5.0E: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)
		T1, T2, T3
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DCH_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		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<sub>or</sub>.

Table A.5.0F: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell	2 (GSM)		
Parameter	Unit	T1	T2, T3		
Absolute RF Channel		ADECN 1			
Number		ARFCN 1			
RXLEV	dBm	-85	-75		

## A.5.4.2 Test Requirements

The UE shall begin to send access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3.

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

# 3GPP TSG RAN WG4 (Radio) Meeting #26

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Madrid, Spain 17 - 22 February, 2003

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How to create CRs using this form:

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

- 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.5.2 FDD/FDD Hard Handover

## A.5.2.1 Handover to intra-frequency cell

### A.5.2.1.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the hard handover delay in CELL\_DCH state in the single carrier case reported in section 5.2.2.1.

The test parameters are given in Table A.5.0 and A.5.0A below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed timed difference shall be reported together with Event 1A. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time "now" at the beginning of T3-with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

Table A.5.0: General test parameters for Handover to intra-frequency cell

Par	Parameter		Value	Comment
DCH parameters			DL and UL Reference	As specified in TS 25.101 section
-			Measurement Channel 12.2 kbps	A.3.1 and A.2.1
Power Control			On	
Target quality va	alue on DTCH	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range	)	dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deact	ivation threshold		0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		S	5	
T2		S	5	
T3		S	5	

Table A.5.0A: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	Cell 1				Cell 2			
		T1	T2	T3	T1	T2	T3		
CPICH_Ec/lor	dB		-10			-10			
PCCPCH_Ec/lo	dB		-12			-12			
r									
SCH_Ec/lor	dB		-12			-12			
PICH_Ec/lor	dB		-15			-15			
DPCH_Ec/lor	dB	Note1	Note1	Note3	N/A	N/A	Note1		
OCNS		Note2	Note2	Note2	-0.941	-0.941	Note2		
$\hat{I}_{or}/I_{oc}$	dB	0	6.	97	-Infinity	5.	97		
$I_{oc}$	dBm/3.84 MHz			-	70				
CPICH_Ec/lo	dB	-13 -Infinity -14					4		
Propagation Condition			AWGN						
Note 1: The DPCH level is controlled by the power control loop									

The power of the OCNS channel that is added shall make the total power from the cell to be equal to  $I_{or}$ Note 2:

The DPCH may not be power controlled by the power control loop. Note 3:

#### A.5.2.1.2 **Test Requirements**

The UE shall start to transmit the UL DPCCH to Cell 2 less than 110 ms from the beginning of time period T3.

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

## A.5.2.2 Handover to inter-frequency cell

#### A.5.2.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the inter frequency hard handover delay in CELL\_DCH state as specified in section 5.2.2.1.

The test consists of three successive time periods, with a time duration T1, T2 and T3. The test parameters are given in tables A.5.0B and A.5.0C 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. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time "now" at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

Table A.5.0B: General test parameters for Handover to inter-frequency cell

Para	meter	Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and A.2.1
Power Control			On	
Target quality val	ue on DTCH	BLER	0.01	
Compressed mod	de		A.22 set 1	As specified in TS 25.101 section A.5.
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold non us	Threshold non used frequency		-18	Absolute Ec/I0 threshold for event 2C
Reporting range		dB	4	Applicable for event 1A
Hysteresis		dB	0	
W			1	Applicable for event 1A
W non-used frequ	uency		1	Applicable for event 2C
Reporting deactive	ation threshold		0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1	<u> </u>	S	5	
T2		S	10	
T3		S	5	

Table A.5.0C: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit		Cell 1		Cell 2		
		T1	T2	T3	T1	T2	T3
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	Note 1	Note3	N/A	N/A	Note 1
OCNS			Note 2		-0.941	-0.941	Note 2
$\hat{I}_{or}/I_{oc}$	dB		0		-Infinity	-1.8	-1.8
$I_{oc}$	dBm/3.84 MHz	-70					
CPICH_Ec/Io	dB	-13			-Infinity	-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<sub>or</sub>

Note 3: The DPCH may not be power controlled by the power control loop.

### A.5.2.2.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 140 ms from the beginning of time period T3.

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

## A.5.3 FDD/TDD Handover

## A.5.3.1 Test purpose and Environment

### A.5.3.1.1 3.84 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CA, A.5.0CB and A.5.0CC below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time "now" at the beginning of T3-with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16] such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CA: General test parameters for FDD/TDD handover

Parameter		Unit	Value	Comment
DCH pa	DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2.2
Power	Control		On	
	lity 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 2	TDD cell
(	Ó		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	
	I non-used Jency	dBm	-75	Applicable for Event 2C
Filter co	efficient		0	
Monitored	cell list size		6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test
Т	<sup>-</sup> 1	S	5	
Т	2	S	15	
T	<del>-</del> 3	S	5	

Table A.5.0CB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1				
		T1, T2	T3			
UTRA RF Channel Number		Channel 1				
CPICH_Ec/lor	dB	-10				
P-CCPCH_Ec/lor	dB	-12				
SCH_Ec/lor	dB	-12				
PICH_Ec/lor	dB					
DPCH_Ec/lor	dB	Note 1	n.a.			
OCNS_Ec/lor	dB	Note 2				
$\hat{I}_{or}/I_{oc}$	dB	0				
$I_{oc}$	dBm/3.84 MHz	-70				
CPICH_Ec/Io	dB	-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  $I_{\rm or}$ 

Table A.5.0CC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit		Cell 2							
DL timeslot number			0		2			8		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel						Chan	nol 2			
Number						Chan	HEI Z			
P-CCPCH_Ec/lor	dB		-3			n.a.			n.a.	
PICH_Ec/lor	dB	n.a.			n.a.			-3		
SCH_Ec/lor	dB		-9		n.a.			-9		
SCH_t <sub>offset</sub>	dB		5		n.a.			5		
DPCH_Ec/lor	dB		n.a.		n.a. Note 1		n.a.			
OCNS_Ec/lor	dB		-3.12		0 Note 2		-3.12			
$\hat{I}_{or}/I_{oc}$	dB	-Inf	(	6	-Inf		6	-Inf	6	6
P-CCPCH RSCP	dBm	-Inf	-Inf -67 n.a.					n.a.		
$I_{oc}$	dBm/3,84	-70								
oc	MHz	-10								
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 lor.

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.5.3.1.2 1.28 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CD, A.5.0CE and A.5.0CF below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CD: General test parameters for FDD/TDD handover

Para	meter	Unit	Value	Comment
DCH parameters			DL Reference Measurement	As specified in TS 25.101 section A.3.1
			Channel 12.2 kbps	and in TS 25.102 section A.2.2
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 2	TDD cell
	0		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	-75	Applicable for Event 2C
Filter co	oefficient		0	
Monitored	cell list size		6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test
T1		S	5	
-	Γ2	S	15	
-	Г3	S	5	

Table A.5.0CE: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1		
		T1, T2	Т3	
UTRA RF Channel Number		Channel 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	n.a.	
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		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<sub>or</sub>

Table A.5.0CF: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2					
DL timeslot number			0		DwPTs		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel				Ch	annel 2		
Number				Ci	iailiei 2		
P-CCPCH_Ec/lor	dB		-3				
DwPCH _Ec/lor	dB	0					
DPCH_Ec/lor	dB						Note 1
OCNS_Ec/lor	dB	-3					Note 2
$\hat{I}_{or}/I_{oc}$	dB	-Inf	6		-Inf		6
P-CCPCH RSCP	dBm	-Inf	-67				
I	dBm/1.28				-70		
$I_{oc}$	MHz	-70					
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							

Note 2: The power of the OCNS channel that is added shall make the total

power from the cell to be equal to lor.

## A.5.3.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 70 ms from the beginning of time period T3.

The rate of correct FDD/TDD handovers observed during repeated tests shall be at least 90%.

## A.5.4 Inter-system Handover from UTRAN FDD to GSM

## A.5.4.1 Test Purpose and Environment

This test is to verify the requirement for the UTRAN to GSM cell handover delay reported in section 5.4.2.1.

The test parameters are given in Table A.5.0D, A.5.0E and A.5.0F below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used.. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Handover from UTRAN command with activation time "now" at beginning of T3 with a new active cell, cell 2. In GSM Handover command contained in that message, IE starting time shall not be included. The RRC HANDOVER FROM UTRAN COMMAND message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

The requirements are also applicable for a UE not requiring compressed mode, in which case no compresed mode pattern should be sent for the parameters specifed in table A5.0D

Table A.5.0D: General test parameters for Correct reporting of GSM neighbours in AWGN 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	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI			Only applicable for UE requiring compressed mode patterns
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		Dette va 2	As an asified in agetical 0.4.2.5.2.4 table
identification		Pattern 2	As specified in section 8.1.2.5.2.1 table 8.7.
- GSM BSIC re- confirmation		Pattern 2	As specified in section 8.1.2.5.2.2 table 8.8.
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		24 FDD neighbours on Channel 1	Measurement control information is
size		6 GSM neighbours including ARFCN 1	sent before the compressed mode patterns starts.
N Identify abort		66	Taken from table 8.7.
T Reconfirm abort		5.5	Taken from table 8.8.
T1	S	20	
T2	S	5	
T3	S	5	

Table A.5.0E: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)
		T1, T2, T3
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DCH_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		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<sub>or</sub>.

Table A.5.0F: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)			
Farameter	Onit	T1	T2, T3		
Absolute RF Channel Number		ARFCN 1			
RXLEV	dBm	-85	-75		

## A.5.4.2 Test Requirements

The UE shall begin to send access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3.

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

# 3GPP TSG RAN WG4 (Radio) Meeting #26

R4-030154

# Madrid, Spain 17 - 22 February, 2003

	CHANGE R	EQUEST	CR-Form-v7
ж <b>2</b>	5 <mark>.133</mark> CR <mark>528</mark> #r	<b>ev</b>	urrent version: 3.12.0 <sup>₩</sup>
For <u>HELP</u> on using	g this form, see bottom of this pag	e or look at the po	op-up text over the \mathbb{H} symbols.
Proposed change affe	<i>cts:</i> UICC appsЖ M	E <mark>X</mark> Radio Acce	ess Network Core Network
Title:	ctivation time in Hard HO test cas	е	
Source: # R	AN WG4		
Work item code:	El		Date: 第 05/03/2003
Dei	e one of the following categories:  F (correction)  A (corresponds to a correction in a B (addition of feature),  C (functional modification of feature)  D (editorial modification)  tailed explanations of the above category	n earlier release) e)	elease: # R99 Use one of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)
Reason for change: ३	transmission after a handover sha the corresponding testcases in A transmit the UL DPCCH to Cell 2	Il be started at the d 5.2., A5.3 and A5.4 2 less than 70 ms from the for the testcase.' uption time compange is received.	lesignated activation time while in it is stated that the UE shall start to om the beginning of time period T3.  This means that the actual activation red with the core requirement,
Summary of change: 3	Change the activation time to available in the UE such that t		
Consequences if ៖ not approved:	The testcase will not test the a	ctual delay requir	rement.
Clauses affected: \$	€ A 5.2, A 5.3, A 5.4		
	Y N  X Other core specifications X Test specifications X O&M Specifications	34.121	
Other comments: 3		ses: CR529 cat.	A to 25.133 v4.7.0, CR521 cat. A

### to 25.133 v5.5.0, CR522 cat. A to 25.133 v6.0.0

### How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked \( \mathcal{H} \) 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.5.2 FDD/FDD Hard Handover

## A.5.2.1 Handover to intra-frequency cell

### A.5.2.1.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the hard handover delay in CELL\_DCH state in the single carrier case reported in section 5.2.2.1.

The test parameters are given in Table A.5.0 and A.5.0A below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed timed difference shall be reported together with Event 1A. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time "now" at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

Table A.5.0: General test parameters for Handover to intra-frequency cell

Pa	Parameter		Value	Comment
DCH parameters			DL and ULReference	As specified in TS 25.101
·			Measurement Channel 12.2 kbps	section A.3.1 and A.2.1
Power Control			On	
Target quality val	ue on DTCH	BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and
				1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and
				1B
Reporting deactive	ation threshold		0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient	Filter coefficient		0	
T1		S	5	
T2	·	S	5	
T3		S	5	

Table A.5.0A: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	Cell 1			Cell 2				
		T1	T2	T3	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	Note1	Note1	Note3	N/A	N/A	Note1		
OCNS		Note2	Note2	Note2	-0.941	-0.941	Note2		
$\hat{I}_{or}/I_{oc}$	dB	0	0 6.97			-Infinity 5.97			
$I_{oc}$	dBm/3.84 MHz		-70						
CPICH_Ec/lo	dB	-13			-Infinity		·14		
Propagation Condition			AWGN						

Note 1: The DPCH level is controlled by the power control loop

### A.5.2.1.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 110 ms from the beginning of time period T3.

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

## A.5.2.2 Handover to inter-frequency cell

## A.5.2.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the inter frequency hard handover delay in CELL\_DCH state as specified in section 5.2.2.1.

The test consists of three successive time periods, with a time duration T1, T2 and T3. The test parameters are given in tables A.5.0B and A.5.0C 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. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time "now" at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to  $I_{or}$ .

Note 3: The DPCH may not be power controlled by the power control loop.

Table A.5.0B: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment	
DCH parameters			DL and UL Reference	As specified in TS 25.101	
			Measurement Channel 12.2 kbps	section A.3.1 and A.2.1	
Power Control			On		
Target quality val	ue on DTCH	BLER	0.01		
Compressed mod	de		A.22 set 1	As specified in TS 25.101 section A.5.	
Initial conditions	Active cell		Cell 1		
	Neighbour cell		Cell 2		
Final conditions	Active cell		Cell 2		
Threshold non us	Threshold non used frequency		-18	Absolute Ec/I0 threshold for event 2C	
Reporting range		dB	4	Applicable for event 1A	
Hysteresis		dB	0		
W			1	Applicable for event 1A	
W non-used frequ	uency		1	Applicable for event 2C	
Reporting deactive	ation threshold		0	Applicable for event 1A	
Time to Trigger		ms	0		
Filter coefficient			0		
T1	T1		5		
T2		S	10		
T3		S	5		

Table A.5.0C: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1			Cell 2			
		T1	T2	Т3	T1	T2	Т3	
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	Note1	Note 1	Note 3	N/A	N/A	Note1	
OCNS			Note 2		-0.941	-0.941	Note 2	
$\hat{I}_{or}/I_{oc}$	dB		0		- Infinity	-1.8	-1.8	
$I_{oc}$	dBm/3.84 MHz	-70						
CPICH_Ec/Io	dB	-13			- Infinity -14			
Propagation Condition		AWGN						

Note 1: The DPCH level is controlled by the power control loop

### A.5.2.2.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 140 ms from the beginning of time period T3.

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

### A.5.3 FDD/TDD Handover

## A.5.3.1 Test purpose and Environment

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I<sub>or</sub>

Note 3: The DPCH may not be power controlled by the power control loop.

The test parameters are given in Table A.5.0CA, A.5.0CB and A.5.0CC below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 "now" with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE-so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16]. such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CA: General test parameters for FDD/TDD handover

Parameter		Unit	Value	Comment	
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2.2	
Power Control			On		
Target quality value on DTCH		BLER	0.01		
Compressed 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 2	TDD cell	
Ö		dB	0	Cell individual offset. This value shall be used for all cells in the test.	
Hysteresis		dB	0	Hysteresis parameter for event 2C	
Time to Trigger		ms	0		
Threshold non-used frequency		dBm	-75	Applicable for Event 2C	
Filter coefficient			0		
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2		
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test	
T1		S	5		
T2		S	15		
Т3		S	5		

Table A.5.0CB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1	
		T1, T2	T3
UTRA RF Channel Number		Channel 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	n.a.
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		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  $I_{\rm or}$ 

**Parameter** Unit Cell 2 DL timeslot number 0 2 R Т3 T1 T2 T3 T2 <u>T1</u> T2 T3 T1 **UTRA RF Channel** Channel 2 Number P-CCPCH Ec/lor dB -3 n.a. PICH\_Ec/lor dB n.a. n.a. -3 SCH\_Ec/lor dΒ -9 -9 n.a. SCH\_toffset dB 5 5 n.a. DPCH\_Ec/lor dB Note 1 n.a. n.a n.a. OCNS\_Ec/lor -3.12 dB n Note 2 -3.12 dΒ -Inf 6 -Inf 6 -Inf 6  $I_{or}/I_{oc}$ P-CCPCH RSCP dBm -Inf -67 n.a. n.a. dBm/  $I_{oc}$ -70 3,84 MHz

Table A.5.0CD: Cell 2 specific test parameters for FDD/TDD handover

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 lor.

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.

**AWGN** 

## A.5.3.2 Test Requirements

**Propagation Condition** 

The UE shall start to transmit the UL DPCH to Cell 2 less than 70 ms from the beginning of time period T3.

The rate of correct FDD/TDD handovers observed during repeated tests shall be at least 90%.

## A.5.4 Inter-system Handover from UTRAN FDD to GSM

### A.5.4.1 Test Purpose and Environment

This test is to verify the requirement for the UTRAN to GSM cell handover delay reported in section 5.4.2.1.

The test parameters are given in Table A.5.0D, A.5.0E and A.5.0F below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used.. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Handover from UTRAN command with activation time at beginning of T3 "now" with a new active cell, cell 2. In GSM Handover command contained in that message, IE starting time shall not be included. The RRC HANDOVER FROM UTRAN COMMAND message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

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 A5.0D

Table A.5.0D: General test parameters for Correct reporting of GSM neighbours in AWGN 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	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI measurement		DL Compressed mode reference pattern 2 in Set 2	Only applicable for UE requiring compressed mode patterns  As specified in table A.22 TS 25.101
- GSM Initial BSIC identification		Pattern 2	section A.5  As specified in section 8.1.2.5.2.1 table
- GSM BSIC re- confirmation		Pattern 2	8.7. As specified in section 8.1.2.5.2.2 table 8.8.
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		24 FDD neighbours on Channel 1	Measurement control information is
size		6 GSM neighbours including ARFCN 1	sent before the compressed mode patterns starts.
N Identify abort		66	Taken from table 8.7.
T Reconfirm abort		5.5	Taken from table 8.8.
T1	S	20	
T2	S	5	
T3	S	5	

Table A.5.0E: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)
		T1, T2, T3
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DCH_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		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<sub>or</sub>

Table A.5.0F: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)		
Parameter	Onit	T1 T2, T3		
Absolute RF Channel		ΔR	FCN 1	
Number		AIN	I CIV I	
RXLEV	dBm	-85	-75	

#### A.5.4.2 Test Requirements

The UE shall begin to send access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3.

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

R4-030155

Madrid, Spain 17 - 22 February, 2003

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How to create CRs using this form:

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- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.5.2 FDD/FDD Hard Handover

## A.5.2.1 Handover to intra-frequency cell

#### A.5.2.1.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the hard handover delay in CELL\_DCH state in the single carrier case reported in section 5.2.2.1.

The test parameters are given in Table A.5.0 and A.5.0A below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed timed difference shall be reported together with Event 1A. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time "now" at the beginning of T3-with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

Table A.5.0: General test parameters for Handover to intra-frequency cell

Pai	rameter	Unit	Value	Comment
DCH parameters	DCH parameters		DL and UL Reference	As specified in TS 25.101
			Measurement Channel 12.2 kbps	section A.3.1 and A.2.1
Power Control			On	
Target quality val	ue on DTCH	BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deactiv	ation threshold		0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		S	5	
T2	T2		5	
T3		S	5	

Table A.5.0A: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit		Cell 1			Cell 2			
		T1	T2	T3	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	Note1	Note1	Note3	N/A	N/A	Note1		
OCNS		Note2	Note2	Note2	-0.941	-0.941	Note2		
$\hat{I}_{or}/I_{oc}$	dB	0	6.	97	-Infinity	5.	97		
$I_{oc}$	dBm/ 3.84 MHz			-	70				
CPICH_Ec/lo	dB	-13 -Infinity -14							
Propagation Condition		AWGN							
			ne power contro						

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I<sub>or</sub>

Note 3: The DPCH may not be power controlled by the power control loop.

#### A.5.2.1.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 110 ms from the beginning of time period T3.

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

#### A.5.2.2 Handover to inter-frequency cell

#### A.5.2.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the inter frequency hard handover delay in CELL\_DCH state as specified in section 5.2.2.1.

The test consists of three successive time periods, with a time duration T1, T2 and T3. The test parameters are given in tables A.5.0B and A.5.0C 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. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time "now" at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

Table A.5.0B: General test parameters for Handover to inter-frequency cell

Para	ameter	Unit	Value	Comment
DCH parameters			DL and UL Reference	As specified in TS 25.101
	•		Measurement Channel 12.2 kbps	section A.3.1 and A.2.1
Power Control			On	
Target quality value	on DTCH	BLER	0.01	
Compressed mode			A.22 set 1	As specified in TS 25.101 section A.5.
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold non used	frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range		dB	4	Applicable for event 1A
Hysteresis		dB	0	
W			1	Applicable for event 1A
W non-used frequen	су		1	Applicable for event 2C
Reporting deactivation	on threshold		0	Applicable for event 1A
Time to Trigger	Time to Trigger		0	
Filter coefficient			0	
T1		S	5	
T2		S	10	
T3	·	S	5	

Table A.5.0C: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1				Cell 2	
		T1	T2	T3	T1	T2	T3
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	Note 1	Note3	N/A	N/A	Note 1
OCNS			Note 2		-0.941	-0.941	Note 2
$\hat{I}_{or}/I_{oc}$	dB		0		-Infinity	-1.8	-1.8
$I_{oc}$	dBm/3.84 MHz	-70					
CPICH_Ec/Io	dB		-13		-Infinity	-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<sub>or</sub>

Note 3: The DPCH may not be power controlled by the power control loop.

#### A.5.2.2.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 140 ms from the beginning of time period T3.

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

#### A.5.3 FDD/TDD Handover

#### A.5.3.1 Test purpose and Environment

#### A.5.3.1.1 3.84 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CA, A.5.0CB and A.5.0CD below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time "now" at the beginning of T3- with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16]. such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CA: General test parameters for FDD/TDD handover

Parai	meter	Unit	Value	Comment
DCH pa	rameters		DL Reference Measurement	As specified in TS 25.101 section A.3.1
	·		Channel 12.2 kbps	and in TS 25.102 section A.2.2
Power	Control		On	
Target qual	ity value on	BLER	0.01	
DT	CH			
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 2	TDD 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	
	non-used ency	dBm	-75	Applicable for Event 2C
Filter co	efficient		0	
Monitored	Monitored cell list size		6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
Т	$T_{SI}$		1.28	The value shall be used for all cells in the test
T	T1		5	
T	2	S	15	
T	3	S	5	

Table A.5.0CB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1		
		T1, T2	Т3	
UTRA RF Channel Number		Channel 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	n.a.	
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		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.5.0CC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2									
DL timeslot number			0		2			8			
		T1	T2	T3	T1	T2	T3	T1	T2	T3	
UTRA RF Channel						Chan	nol 2				
Number						Chan	HEI Z				
P-CCPCH_Ec/lor	dB		-3			n.a.			n.a.		
PICH_Ec/lor	dB		n.a.			n.a.			-3		
SCH_Ec/lor	dB		-9		n.a.			-9			
SCH_t <sub>offset</sub>	dB		5		n.a.			5			
DPCH_Ec/lor	dB		n.a.		n.a. Note 1			n.a.			
OCNS_Ec/lor	dB		-3.12		(	0 Note 2		-3.12			
$\hat{I}_{or}/I_{oc}$	dB	-Inf	(	6	-Inf 6		-Inf	-Inf 6			
P-CCPCH RSCP	dBm	-Inf -67			n.a. n.a.						
$I_{oc}$	dBm/3,84	-70									
oc	MHz	-70									
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 lor.

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.5.3.1.2 1.28 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL\_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CD, A.5.0CE and A.5.0CF below. 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. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CD: General test parameters for FDD/TDD handover

Parar	neter	Unit	Value	Comment
DCH pai	DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2.2
Power	Control		On	
	ity value on CH	BLER	0.01	
Compress	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 2	TDD 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	
	non-used lency	DBm	-75	Applicable for Event 2C
Filter co	efficient		0	
Monitored (	Monitored cell list size		6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test
Т	T1		5	
T	2	S	15	
Т	3	S	5	

Table A.5.0CE: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1		
		T1, T2	T3	
UTRA RF Channel Number		Channel 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	n.a.	
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		AWGN		

Note 1:

The DPCH level is controlled by the power control loop
The power of the OCNS channel that is added shall make the total
power from the cell to be equal to I<sub>or</sub> Note 2:

Table A.5.0CF: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2					
DL timeslot number		0			DwPTs		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel				Ch	annel 2		
Number				Ci	iailiei 2		
P-CCPCH_Ec/lor	dB		-3				
DwPCH _Ec/lor	dB					0	
DPCH_Ec/lor	dB						Note 1
OCNS_Ec/lor	dB		-3				Note 2
$\hat{I}_{or}/I_{oc}$	dB	-Inf 6		-Inf		6	
P-CCPCH RSCP	dBm	-Inf	-6	67			
I	dBm/1.28	-70					
$I_{oc}$	MHz	-70					
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							

Note 2: The power of the OCNS channel that is added shall make the total

power from the cell to be equal to lor.

#### A.5.3.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 70 ms from the beginning of time period T3.

The rate of correct FDD/TDD handovers observed during repeated tests shall be at least 90%.

## A.5.4 Inter-system Handover from UTRAN FDD to GSM

#### A.5.4.1 Test Purpose and Environment

This test is to verify the requirement for the UTRAN to GSM cell handover delay reported in section 5.4.2.1.

The test parameters are given in Table A.5.0D, A.5.0E and A.5.0F below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used.. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Handover from UTRAN command with activation time "now" at beginning of T3 with a new active cell, cell 2. In GSM Handover command contained in that message, IE starting time shall not be included. . The RRC HANDOVER FROM UTRAN COMMAND message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

The requirements are also applicable for a UE not requiring compressed mode, in which case no compresed mode pattern should be sent for the parameters specifed in table A5.0D

Table A.5.0D: General test parameters for Correct reporting of GSM neighbours in AWGN 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	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI measurement		DL Compressed mode reference pattern 2 in Set 2	Only applicable for UE requiring compressed mode patterns  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.
- GSM BSIC re- confirmation		Pattern 2	As specified in section 8.1.2.5.2.2 table 8.8.
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.
T Reconfirm abort		5.5	Taken from table 8.8.
T1	S	20	
T2	S	5	
T3	s	5	

Table A.5.0E: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)
		T1, T2, T3
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DCH_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		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<sub>or</sub>.

Table A.5.0F: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)		
Farameter	Onit	T1 T2, T3		
Absolute RF Channel Number		AR	FCN 1	
RXLEV	dBm	-85	-75	

#### A.5.4.2 Test Requirements

The UE shall begin to send access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3.

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

R4-030248

Madrid, Spain 17 - 22 February, 2003

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

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.
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## A.6.2 Random Access

## A.6.2.1 Test Purpose and Environment

The purpose of these tests are to verify that the behaviour of the random access procedure is according to the requirements and that the PRACH power settings are within specified limits. This tests will verify the requirements in section 6.3.2.

Table A.6.5: RF Parameters for Random Access test

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
Number of other transmitted Acquisition Indicators	-	0
AICH_Ec/lor	dB	-10
PICH_Ec/lor	dB	-15
OCNS_Ec/lor when an AI is not transmitted	dB	-0.941
OCNS_Ec/lor when an AI is transmitted	dB	-1.516
$\hat{I}_{or}/I_{oc}$	dB	0
$I_{oc}$	dBm/3.84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

The test parameters "System Information Block (SIB) type 5 (ASC #0)" defined in section 6.1 of TS34.108, shall be used in all random access tests. Crucial parameters for the test requirements are repeated in Table A.6.6 and A.6.7 and these overrule the parameters defined in SIB type 5.

Table A.6.6: UE parameters for Random Access test

Parameter	Unit	Value
Access Service Class		
(ASC#0)		
	01	1
- Persistence value		
Maximum number of preamble		2
ramping cycles (M <sub>max</sub> ).		
Maximum number of		12
preambles in one preamble		
ramping cycle		
(Preamble Retrans Max)		
The backoff time T <sub>B01</sub>	ms	N/A
N <sub>B01min=</sub> N <sub>B01max</sub>	#TTI	10
Dower step when no	dB	3
Power step when no acquisition indicator is	UD	3
received		
(Power offset P0)		
Power offset between the last	dB	0
transmitted preamble and the	uD	
control part of the message		
(Power offset P p-m)		
Maximum allowed UL TX	dBm	21
power		
	<u> </u>	<u> </u>

Table A.6.7: UTRAN parameters for Random Access test

Parameter	Unit	Value
Primary CPICH DL TX power	dBm	-8
UL interference	dBm	<del>-102</del> <u>-92</u>
SIR in open loop power	dB	<del>0</del> -10
control (Constant value)		
AICH Power Offset	dB	0

R4-030249

Madrid, Spain 17 - 22 February, 2003

CHANGE REQUEST							
*	25.133 CR 545	жrev <sup>ж</sup>	Current version: 4.7.0 **				
For <u>HELP</u> on us	sing this form, see bottom of th	is page or look at the	e pop-up text over the 業 symbols.				
Proposed change a	affects: UICC apps器	ME Radio Ad	ccess Network X Core Network				
Title: ∺	Constant Value in Random A	ccess Test requirem	ents				
Source: #	RAN WG4						
Work item code: ₩	TEI		Date: 第 05/03/2003				
	A Use one of the following categorie F (correction) A (corresponds to a correcti B (addition of feature), C (functional modification of D (editorial modification) Detailed explanations of the abov be found in 3GPP TR 21.900.	ion in an earlier release feature)	Release: # Rel-4  Use one of the following releases: 2 (GSM Phase 2) e) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)				
Reason for change	In Table A.6.7, the value Tests is outside of range		Constant Value" in Random Access 31.				
Summary of change	Tests changed to "-10",	so that the value is i eter "UL interference"	Constant Value" in Random Access n the specified range of TS25.331. 'is changed accordingly to keep the				
Consequences if not approved:	器 Random Access Tests o "Constant value" as curr		vith the value of the parameter				
Clauses affected:	ж Table A.6.7						
Other specs affected:	Y N  X Other core specific X Test specifications O&M Specification	3					
Other comments:	Equivalent CRs in other to 25.133 v5.5.0, CR547		at. F to 25.133 v3.12.0, CR546 cat. A 0.0				

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

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## A.6.2 Random Access

## A.6.2.1 Test Purpose and Environment

The purpose of these tests are to verify that the behaviour of the random access procedure is according to the requirements and that the PRACH power settings are within specified limits. This tests will verify the requirements in section 6.3.2.

Table A.6.5: RF Parameters for Random Access test

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
Number of other transmitted Acquisition Indicators	-	0
AICH_Ec/lor	dB	-10
PICH_Ec/lor	dB	-15
OCNS_Ec/lor when an AI is not transmitted	dB	-0.941
OCNS_Ec/lor when an AI is transmitted	dB	-1.516
$\hat{I}_{or}/I_{oc}$	dB	0
$I_{oc}$	dBm/3.84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

The test parameters "System Information Block (SIB) type 5 (ASC #0)" defined in section 6.1 of TS34.108, shall be used in all random access tests. Crucial parameters for the test requirements are repeated in Table A.6.6 and A.6.7 and these overrule the parameters defined in SIB type 5.

Table A.6.6: UE parameters for Random Access test

Parameter	Unit	Value
Access Service Class		
(ASC#0)		
	01	1
- Persistence value		
Maximum number of preamble		2
ramping cycles (M <sub>max</sub> ).		
Maximum number of		12
preambles in one preamble		
ramping cycle		
(Preamble Retrans Max)		
The backoff time T <sub>B01</sub>	ms	N/A
N <sub>B01min=</sub> N <sub>B01max</sub>	#TTI	10
Power step when no	dB	3
acquisition indicator is		
received		
(Power offset P0)		
Power offset between the last	dB	0
transmitted preamble and the		
control part of the message		
(Power offset P p-m)		
Maximum allowed UL TX	dBm	21
power		

Table A.6.7: UTRAN parameters for Random Access test

Parameter	Unit	Value
Primary CPICH DL TX power	dBm	-8
UL interference	dBm	<del>-102</del> - <u>92</u>
SIR in open loop power	dB	<del>0</del> -10
control (Constant value)		
AICH Power Offset	dB	0

R4-030250

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CHANGE REQUEST								CR-Form-v7				
*		25	.133	CR 5	46	∺rev		Ħ	Current vers	sion:	5.5.0	¥
For <u></u>	For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the <b>%</b> symbols.											
	ed change			JICC ap		ME			ccess Netwo	ork X	Core Ne	etwork
Title:	Ж	Cor	nstant	Value in	Random A	Access Te	st requ	uirem	ents			
Source:	Ж	RA	N WG	4								
Work ite	em code: ₩	TEI							Date: ₩	05/	03/2003	
Categor	<i>y:</i> ∺	Deta	F (cor A (cor B (add C (fun D (edi iled ex	rection) responds dition of fe ctional m torial mod	odification of dification) s of the abov	tion in an ea f feature)		elease	Release: # Use <u>one</u> of 2 ) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	f the for (GSN) (Relea (Relea (Relea (Relea (Relea		eases:
Reason	for chang	e: Ж			7, the value ide of range				Constant Val 31.	ue" in	Random	Access
Summai	ry of chan	<b>ge:</b> ૠ	Test The	s change value of	ed to "-10",	, so that th eter "UL in	e valu terfere	ıe is iı	onstant Value on the specific is changed	ed rai	nge of TS2	25.331.
Consequence not appr	uences if roved:	Ж			ess Tests o lue" as curi			ited w	vith the value	e of th	e parame	ter
Clauses	affected:	ж	Tabl	e A.6.7								
Other sp		¥	Y N X X	Test sp	core specificecifications	S	X					
Other co	omments:	¥			Rs in other 7.0, CR547				at. F to 25.13 0.0	33 v3.	12.0, CR5	45 cat. A

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## A.6.2 Random Access

## A.6.2.1 Test Purpose and Environment

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SCH_Ec/lor	dB	-12
Number of other transmitted Acquisition Indicators	-	0
AICH_Ec/lor	dB	-10
PICH_Ec/lor	dB	-15
OCNS_Ec/lor when an AI is not transmitted	dB	-0.941
OCNS_Ec/lor when an Al is transmitted	dB	-1.516
$\hat{I}_{or}/I_{oc}$	dB	0
$I_{oc}$	dBm/3.84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

The test parameters "System Information Block (SIB) type 5 (ASC #0)" defined in section 6.1 of TS34.108, shall be used in all random access tests. Crucial parameters for the test requirements are repeated in Table A.6.6 and A.6.7 and these overrule the parameters defined in SIB type 5.

Table A.6.6: UE parameters for Random Access test

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Access Service Class		
(ASC#0)		
	01	1
- Persistence value		
Maximum number of preamble		2
ramping cycles (M <sub>max</sub> ).		
Maximum number of		12
preambles in one preamble		
ramping cycle		
(Preamble Retrans Max)		N1/A
The backoff time T <sub>B01</sub>	ms "TT!	N/A
N <sub>B01min=</sub> N <sub>B01max</sub>	#TTI	10
Power step when no	dB	3
acquisition indicator is		
received		
(Power offset P0)		
Power offset between the last	dB	0
transmitted preamble and the		
control part of the message		
(Power offset P p-m)		
Maximum allowed UL TX	dBm	21
power		

Table A.6.7: UTRAN parameters for Random Access test

Parameter	Unit	Value
Primary CPICH DL TX power	dBm	-8
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SIR in open loop power	dB	<del>0</del> -10
control (Constant value)		
AICH Power Offset	dB	0

R4-030251

Madrid, Spain 17 - 22 February, 2003

CHANGE REQUEST									CR-Form-v7		
*	25.	133	CR 5	47	⊭ re\	′	¥	Current vers	sion:	6.0.0	#
For <mark>HELP</mark> on u	sing ti	his for	m, see b	ottom of	this page	or look	at the	pop-up text	t over	the ૠ syn	nbols.
Proposed change	affect	<b>s:</b> l	JICC app	os# <mark> </mark>	ME[	Ra	dio Ac	cess Netwo	rk X	Core Ne	twork
Title: 第	Cor	stant	Value in	Random	Access T	est req	uirem	ents			
Source: #	RAI	۱ WG	4								
Work item code: ₩	TEI							Date: ₩	05/	/03/2003	
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Consequences if not approved:	$\mathbb{H}$				cannot be urrently def		uted w	vith the value	of th	e parame	ter
Clauses affected:	ж	Table	e A.6.7								
Other specs affected:	Ж	Y N X X	Test sp	ore speci ecification pecification	ns	Ж					
Other comments:	Ħ				er Release 46 cat. A t			it. F to 25.13 5.0	33 v3.	12.0, CR5	45 cat. A

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## A.6.2 Random Access

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AICH_Ec/lor	dB	-10
PICH_Ec/lor	dB	-15
OCNS_Ec/lor when an AI is not transmitted	dB	-0.941
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$\hat{I}_{or}/I_{oc}$	dB	0
$I_{oc}$	dBm/3.84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

The test parameters "System Information Block (SIB) type 5 (ASC #0)" defined in section 6.1 of TS34.108, shall be used in all random access tests. Crucial parameters for the test requirements are repeated in Table A.6.6 and A.6.7 and these overrule the parameters defined in SIB type 5.

Table A.6.6: UE parameters for Random Access test

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- Persistence value		
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ramping cycles (M <sub>max</sub> ).		
Maximum number of		12
preambles in one preamble		
ramping cycle		
(Preamble Retrans Max)		
The backoff time T <sub>B01</sub>	ms	N/A
N <sub>B01min=</sub> N <sub>B01max</sub>	#TTI	10
Dower step when no	dB	3
Power step when no acquisition indicator is	UD	3
received		
(Power offset P0)		
Power offset between the last	dB	0
transmitted preamble and the	uD	
control part of the message		
(Power offset P p-m)		
Maximum allowed UL TX	dBm	21
power		
	<u> </u>	

Table A.6.7: UTRAN parameters for Random Access test

Parameter	Unit	Value
Primary CPICH DL TX power	dBm	-8
UL interference	dBm	<del>-102</del> - <u>92</u>
SIR in open loop power	dB	<del>0</del> -10
control (Constant value)		
AICH Power Offset	dB	0