# **RP-020293**

# TSG RAN Meeting #16 Marco Island, FL, USA, 4 - 7 June 2002

# TitleCRs (Rel-4 and Rel-5 Category A) to TS 25.123SourceTSG RAN WG4Agenda Item7.4.4

RAN4 Tdoc	Spec	Curr Ver	New Ver	CR	R	Cat	Ph	Title	Acronym
R4-020659	25.123	4.4.0	4.5.0	195		F	Rel-4	Introduction of TDD/TDD cell reselection in CELL_PCH	LCRTDD-RF
R4-020660	25.123	5.0.0	5.1.0	196		Α	Rel-5	Introduction of TDD/TDD cell reselection in CELL_PCH	LCRTDD-RF
R4-020661	25.123	4.4.0	4.5.0	197		F	Rel-4	Introduction of TDD/TDD cell reselection in URA_PCH	LCRTDD-RF
R4-020662	25.123	5.0.0	5.1.0	198		Α	Rel-5	Introduction of TDD/TDD cell reselection in URA_PCH	LCRTDD-RF
R4-020663	25.123	4.4.0	4.5.0	199		F	Rel-4	Correction of section 4	LCRTDD-RF
R4-020664	25.123	5.0.0	5.1.0	200		Α	Rel-5	Correction of section 4	LCRTDD-RF
R4-020665	25.123	4.4.0	4.5.0	201		F	Rel-4	Correction of section 5	LCRTDD-RF
R4-020666	25.123	5.0.0	5.1.0	202		Α	Rel-5	Correction of section 5	LCRTDD-RF
R4-020667	25.123	4.4.0	4.5.0	203		F	Rel-4	Correction of section A.5 for 1.28 Mcps TDD option	LCRTDD-RF
R4-020668	25.123	5.0.0	5.1.0	204		Α	Rel-5	Correction of section A.5 for 1.28 Mcps TDD option	LCRTDD-RF
R4-020669	25.123	4.4.0	4.5.0	205		F	Rel-4	Correction of timing advance characteristics for 1.28 Mcps TDD option	LCRTDD-RF
R4-020670	25.123	5.0.0	5.1.0	206		A	Rel-5	Correction of timing advance characteristics for 1.28 Mcps TDD option	LCRTDD-RF
R4-020671	25.123	4.4.0	4.5.0	207		F	Rel-4	Change of RF Channel Number for intra frequency in test parameter and remove square brackets	LCRTDD-RF
R4-020672	25.123	5.0.0	5.1.0	208		A	Rel-5	Change of RF Channel Number for intra frequency in test parameter and remove square brackets	LCRTDD-RF
R4-020745	25.123	4.4.0	4.5.0	210		F	Rel-4	Correction to TDD/FDD handover test case for 1.28 Mcps TDD	LCRTDD-RF
R4-020746	25.123	5.0.0	5.1.0	211		A	Rel-5	Correction to TDD/FDD handover test case for 1.28 Mcps TDD	LCRTDD-RF

RAN4 Tdoc	Spec	Curr Ver	New Ver	CR	R	Cat	Ph	Title	Acronym
R4-020747	25.123	4.4.0	4.5.0	212		F	Rel-4	Correction of cell reselection in idle mode test case	LCRTDD-RF
R4-020748	25.123	5.0.0	5.1.0	213		Α	Rel-5	Correction of cell reselection in idle mode test case	LCRTDD-RF
R4-020971	25.123	4.4.0	4.5.0	216	1	F	Rel-4	Correction to ISCP measurement and related test cases for 1.28 Mcps TDD	LCRTDD-RF
R4-020972	25.123	5.0.0	5.1.0	217	1	A	Rel-5	Correction to ISCP measurement and related test cases for 1.28 Mcps TDD	LCRTDD-RF
R4-020973	25.123	4.4.0	4.5.0	218	1	F	Rel-4	Correction to TDD section 9 testing in Annex A9 for 1.28 Mcps TDD	LCRTDD-RF
R4-020974	25.123	5.0.0	5.1.0	219	1	A	Rel-5	Correction to TDD section 9 testing in Annex A9 for 1.28 Mcps TDD	LCRTDD-RF

R4-020659

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

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ж	<mark>25.123</mark>	CR 195	жrev	- # C	urrent versio	<sup>n:</sup> 4.4.0 <sup>¥</sup>
For <u>HELP</u> on t	using this fo	rm, see bottom	of this page or	look at the p	op-up text ov	/er the X symbols.
Proposed change	affects: ೫	(U)SIM	ME/UE X	Radio Acce	ss Network	Core Network
Title: भ	Introduct	ion of TDD/TDD	cell reselectio	on in CELL_P	СН	
Source: ೫	RAN WG	4				
Work item code: भ		-RF			Date: ೫ 📑	17/5/2002
Category: भ Reason for chang Summary of chan	F (coi A (co. B (ad C (fur D (ed Detailed ex be found in e: # No t	the following cat rrection) rresponds to a co dition of feature), notional modificat itorial modificatio planations of the 3GPP <u>TR 21.900</u> est cases are s	prrection in an ea ion of feature) n) above categorie <u>0</u> . pecified for TD	erlier release) es can D/TDD cell re	2 (G R96 (F R97 (F R98 (F R99 (F REL-4 (F REL-5 (F eselection in	e following releases: GSM Phase 2) Release 1996) Release 1997) Release 1999) Release 1999) Release 4) Release 5) CELL_PCH.
Consequences if not approved:	Isola		alysis: Introduc	tion of test ca	ses where th	d. ne specification was ke indicated in the
Clauses affected:	ж <mark>А.5.</mark>	5				
Other specs affected:	X T	other core speci est specification &M Specification	าร	34.122		
Other comments:	¥ Equ	ivalent CRs in c	other Releases	: CR196 cat.	A to 25.123	v5.0.0

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

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

# A.5.5 Cell Re-selection in CELL\_PCH

# A.5.5.1 Scenario 1: TDD/TDD cell re-selection single carrier case

# A.5.5.1.1 Test Purpose and Environment

# A5.5.1.1.1 3.84Mcps TDD option

This test is to verify the requirement for the cell re-selection delay in CELL\_PCH state in section 5.5.2.

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.5 and A.5.6.

#### Table A.5.5: General test parameters for Cell Re-selection single carrier multi-cell case

	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final	Active cell		Cell2	
condition				
	HCS	Not used		
UE_TX	PWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
	Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
	ervice Class (ASC#0) ersistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T <sub>SI</sub>	S	1.28	The value shall be used for all cells in the test.
DRX cycle length		S	1.28	The value shall be used for all cells in the test.
T1		S	15	
	T2	S	15	

Parameter	Unit		Ce	1			Ce	ll 2			Ce	II 3	
Timeslot Number		(	)	8	3	(	)	8	3	(	0	8	8
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Chan	nel 1			Char	nnel 1		Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10
PICH Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1 <sub>s,n</sub>	dB			C3:0; C1 ; C1,C6:				C3:0; C2; ; C2, C6:			1: 0; C3, C3, C5: 0		
Qhyst1 <sub>s</sub>	dB			)				<u>)</u>				)	
Treselection	S		(	)			(	C		0			
Sintrasearch	dB		not	sent			not	sent			not	sent	
			Ce	II 4				II 5				II 6	
Timeslot		(	)	8	3	(	)	8	3	(	0	8	В
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Chan	nel 1		Channel 1				Char	nel 1		
PCCPCH Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4				C2:0; C5 C5, C6:			1: 0; C6, C6, C4:0;		
Qhyst1 <sub>s</sub>	dB			)				)			, ,	)	
Treselection	S		(	)		0				0			
Sintrasearch	dB		not	sent			not	sent			not	sent	
I <sub>oc</sub>	dBm/3, 84 MHz		-70										
Propagation Condition			AWGN										

Table A.5.6: Cell re-selection single carrier multi-cell case

# A5.5.1.1.2 1.28Mcps TDD option

(void)- This test is to verify the requirement for the cell re-selection delay in CELL PCH state in section 5.5.2.2.

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.5A and A.5.6A.

# Table A.5.5A: General test parameters for Cell Re-selection single carrier multi-cell case

Pa	rameter	Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5,	
			<u>Cell6</u>	
Final condition	Active cell		Cell2	
	<u>HCS</u>		Not used	
<u>UE_TXPW</u>	<u> R MAX RACH</u>	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in the test.
<u>Qr</u>	<u>xlevmin</u>	<u>dBm</u>	<u>-103</u>	The value shall be used for all cells in the test.
	ce Class (ASC#0) stence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	<u>T<sub>SI</sub></u>	<u>s</u>	<u>1.28</u>	The value shall be used for all cells in the test.
DRX o	cycle length	<u>s</u>	<u>1.28</u>	The value shall be used for all cells in the test.
	<u>T1</u>	<u>S</u>	<u>15</u>	
	<u>T2</u>	<u>s</u>	<u>15</u>	

### Table A.5.6A: Cell re-selection single carrier multi-cell case

Parameter	Unit		Ce	II <u>1</u>			Ce	<u>   2</u>			Ce	II <u>3</u>			
Timeslot Number		(	)	DW	PT <u>S</u>		0	DW	PTS		0	DW	PTS		
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>		
UTRA RF Channel			Char	nnel 1			Char	nnel 1			Char	nel 1			
Number								<u></u>							
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>				
DwPCH_Ec/lor	<u>dB</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>		
PCCPCH RSCP	<u>dBm</u>	<u>-64</u>	<u>-66</u>			<u>-66</u>	<u>-64</u>			-74	-74				
<u>Qoffset1<sub>s,n</sub></u>	<u>dB</u>			<u>C3:0; C</u> ; C1,C6:			<u>1: 0; C2,</u> 2, C5: 0				<u>1: 0; C3,</u> 3, C5: 0				
Qhyst1 <sub>s</sub>	dB			0				)				)			
Treselection	S			0			(	)				0			
\$intrasearch	dB		not	sent			not	sent			not sent				
			Ce	ll 4		<u>Cell 5</u>					Ce	<u>ll 6</u>			
<u>Timeslot</u>			<u>)</u>		PTS	<u>0</u> <u>DWPTS</u>					0	DW	PTS		
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>		
UTRA RF Channel Number			<u>Char</u>	nnel 1		Channel 1				Channel 1					
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3				
DwPCH_Ec/lor	dB			0	0			0	0			0	0		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>		
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74				
Qoffset1 <sub>s.n</sub>	<u>dB</u>			C2:0; C4; C4; C6:			<u>1: 0; C5,</u> C5, C4:0;				<u>1: 0; C6,</u> C6, C4:0;				
Qhyst1 <sub>s</sub>	dB			0	-			)				)	-		
Treselection	S		-	0			(	0			(	)			
\$intrasearch	dB		not	sent			not	sent		not sent					
Ioc	<u>dBm/1.</u> <u>28 MHz</u>		<u>-70</u>												
Propagation Condition			AWGN												

# A.5.5.1.2 Test Requirements

### A5.5.1.2.1 for 3.84Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the CELL UPDATE message with cause "cell reselection" in cell 2.

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateTDD} + T_{SI},$  where:

TevaluateTDDA DRX cycle length of 1280ms is assumed for this test case, this leads to a Tevaluate TDD of 6.4s<br/>according to Table 4.1 in section 4.2.2.7.TSIMaximum repetition period of relevant system info blocks that needs to be received by the UE to

camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

# A5.5.1.2.2 1.28Mcps TDD option

void The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send SYNCH-UL sequence in the UpPTS for sending the CELL UPDATE message with cause "cell reselection" in cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateNTDD} + T_{SI}$ , where:

 $\frac{T_{evaluateNTDD}:}{according to Table 4.1A in section 4.2.} A DRX cycle length of 1280ms is assumed for this test case, this leads to a T_{evaluate NTDD} of 6.4s$ 

 $\underline{T}_{SI}$ :Time required for receiving all the relevant system information data according to the reception<br/>procedure and the RRC procedure delay of system information blocks defined in 25.331 for a<br/>UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

# A.5.5.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

A.5.5.2.1 Test Purpose and Environment

# A.5.5.2.1.1 for 3.84Mcps TDD option

This test is to verify the requirement for the cell re-selection delay in CELL\_PCH state in section 5.5.2.

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.7 and A.5.8.

Table A.5.7: General test parameters for Cell Re-selection in Multi carrier case	
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Р	arameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition			Cell2	
	HCS		Not used	
UE_TXP	WR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
(	Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
	vice Class (ASC#0) sistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T <sub>SI</sub>	S	1.28	The value shall be used for all cells in the test.
DRX	DRX cycle length		1.28	The value shall be used for all cells in the test.
	T1		30	
	T2	S	15	

## Table A.5.8: Cell re-selection multi carrier multi cell case

Parameter	Unit		Ce	II 1			Ce	ll 2			Ce	II 3	
Timeslot Number		C	)	8	3	(	)	8	3	(	0	8	8
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel			Chan	nol 1			Char	nel 2			Char	nnel 1	
Number													
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76		
Qoffset1 <sub>s,n</sub>	dB			C3:0; C1 C1, C6:				C3:0; C2 C2, C6:				C2:0; C3; C3; C3; C6;	
Qhyst1 <sub>s</sub>	dB		(		-			)	-			)	-
Treselection	S		(	)			(	)			(	)	
Sintrasearch	dB		not	sent			not	sent		not sent			
Sintersearch	dB		not	sent		not sent				not sent			
				II 4		Cell 5						ll 6	
Timeslot		C	)	8	3	(	)	8	3	(	0	8	B
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel			Chan	nol 1			Char	nel 2			Char	nnel 2	
Number									-		Chai		
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76		
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4 C4, C6:0				C2:0; C5 C5, C6:				C2:0; C6 C6, C5:	
Qhyst1 <sub>s</sub>	dB			)				)				) )	
Treselection	S		(	)			(	)			(	)	
Sintrasearch	dB		not	sent			not	sent			not	sent	
Sintersearch	dB			sent				sent				sent	
I <sub>oc</sub>	dBm/3, 84 MHz	-70											
Propagation Condition		AWGN											

# A.5.5.2.1.2 for 1.28Mcps TDD option

(void) This test is to verify the requirement for the cell re-selection delay in CELL PCH state in section 5.5.2.2.

This scenario implies the presence of 2 carriers and 6 cells as given in Table A.5.7A and A.5.8A.

## Table A.4.3A: General test parameters for Cell Re-selection in Multi carrier case

Pa	rameter	Unit	Value	Comment
Initial condition	Active cell		<u>Cell1</u>	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5,	
			<u>Cell6</u>	
Final condition	Active cell		<u>Cell2</u>	
	<u>HCS</u>		Not used	
<u>UE_TXPW</u>	<u> /R_MAX_RACH</u>	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in
				the test.
<u>Qr</u>	xlevmin	<u>dBm</u>	<u>-103</u>	The value shall be used for all cells in
				the test.
	ice Class (ASC#0)			Selected so that no additional delay is
- Persis	stence value		<u>1</u>	caused by the random access
				procedure. The value shall be used for
				all cells in the test.
	<u>T<sub>SI</sub></u>	<u>s</u>	<u>1.28</u>	The value shall be used for all cells in
				the test.
DRX o	<u>cycle length</u>	<u>s</u>	<u>1.28</u>	The value shall be used for all cells in
				the test.
	<u>T1</u>	<u>s</u>	<u>30</u>	
	<u>T2</u>	<u>s</u>	<u>15</u>	

-	1	1				1				1					
Parameter	<u>Unit</u>			<u>   1</u>				<u>   2</u>				<u>II 3</u>			
Timeslot Number			2		PTS		)		PTS		0		PTS		
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>		
UTRA RF Channel			<u>Char</u>	<u>nnel 1</u>			<u>Char</u>	nel 2			<u>Char</u>	nel 1			
Number		-		r	r	-	ā	1	r	-		1	r		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>	-		<u>-3</u>	<u>-3</u>	-	-	<u>-3</u>	<u>-3</u>	-			
DwPCH_Ec/lor	<u>dB</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>10</u>	<u>7</u>	<u>10</u>	<u>7</u>	<u>7</u>	<u>10</u>	<u>7</u>	<u>10</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>		
PCCPCH RSCP	dBm	-63	-66			-66	-63			-74	-74				
Qoffset1 <sub>s,n</sub>	dB			C3:0; C		C	2, C1: 0;	C2, C3:	0;		1: 0; C3,				
QUISELIs,n	<u>ub</u>	(	C1, C5:0	<u>; C1, C6:</u>	<u>0</u>	<u>C2,C</u>	4:0C2, C	C5:0; C2,	<u>C6:0</u>	(	C3, C5:0;	C3, C6:	0		
<u>Qhyst1</u> s	<u>dB</u>			<u>0</u>			(	<u>)</u>			(	<u>)</u>			
Treselection	<u>s</u>			<u>0</u>			(	<u>)</u>			(	<u>)</u>			
<u> \$intrasearch</u>	<u>dB</u>		<u>not</u>	<u>sent</u>			<u>not</u>	<u>sent</u>		not sent					
<u> \$intersearch</u>	<u>dB</u>		not sent					not sent				not sent			
			<u>Cell 4</u>					<u>ll 5</u>			<u>Ce</u>	<u>ll 6</u>			
<u>Timeslot</u>		-	<u>0</u>		<u>PTS</u>		<u>)</u>		<u>PTS</u>		<u>0</u>		PTS		
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>		
<u>UTRA RF Channel</u>			<u>Cha</u>	nnel			<u>Char</u>	nel 2			<u>Cha</u>	nnel			
Number			1		1			1	1						
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	-3			-3	<u>-3</u>			-3	<u>-3</u>				
DwPCH_Ec/lor	<u>dB</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>		
PCCPCH RSCP	<u>dBm</u>	<u>-74</u>	-74			-74	<u>-74</u>			-74	<u>-74</u>				
<u>Qoffset1<sub>s,n</sub></u>	<u>dB</u>			<u>C2:0; C4</u> ; C4, C6:				C2:0; C5			1: 0; C6, C6, C4:0;				
Qhyst1 <sub>s</sub>	dB			0	<u> </u>			)	<u> </u>			)	<u> </u>		
Treselection	<u>s</u>		-	<u>o</u> 0				<u>)</u>				<u>)</u>			
Sintrasearch	dB		-	<u>s</u> ent			-	<u>s</u> ent		not sent					
Sintersearch	dB			sent				sent		not sent					
I <sub>oc</sub>	<u>dBm/3,</u> 84 MHz		<u></u>												
Propagation Condition			AWGN												

#### Table A.4.4A: Cell re-selection multi carrier multi cell case

# A.5.5.2.2 Test Requirements

# A.5.5.2.2.1 for 3.84Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the CELL UPDATE message with cause "cell reselection" in cell 2.

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateTDD} + T_{SI}$ , where:

 $T_{evaluateTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluateTDD}$  of 6.4s according to Table 4.1 in section 4.2.2.7.

T<sub>SI</sub> Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

# A.5.5.2.2.2 for 1.28Mcps TDD option

(void) The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the SYNCH-UL sequence in the UpPTS for sending the CELL UPDATE message with cause "cell reselection" in cell 2.

The cell re-selection delay shall be less than 8 s.

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

#### NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateNTDD} + T_{SI}$ , where:

 $\frac{T_{evaluateNTDD}}{A DRX cycle length of 1280ms is assumed for this test case, this leads to a T_{evaluate NTDD} of 6.4s}{according to Table 4.1A in section 4.2.}$ 

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

This gives a total of 7.68 s, allow 8s in the test case.

R4-020660

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

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### How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

# A.5.5 Cell Re-selection in CELL\_PCH

# A.5.5.1 Scenario 1: TDD/TDD cell re-selection single carrier case

# A.5.5.1.1 Test Purpose and Environment

# A5.5.1.1.1 3.84Mcps TDD option

This test is to verify the requirement for the cell re-selection delay in CELL\_PCH state in section 5.5.2.

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.5 and A.5.6.

#### Table A.5.5: General test parameters for Cell Re-selection single carrier multi-cell case

	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final	Active cell		Cell2	
condition				
	HCS		Not used	
UE_TX	PWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
	Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
	ervice Class (ASC#0) ersistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T <sub>SI</sub>	S	1.28	The value shall be used for all cells in the test.
DR	X cycle length	S	1.28	The value shall be used for all cells in the test.
	T1	S	15	
	T2	S	15	

Parameter	Unit		Ce	ll 1			Ce	ll 2			Ce	II 3		
Timeslot Number		(	0 8				)		3	(	)	,	3	
		T1	T1 T2 T1 T2				T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1	
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74			
Qoffset1 <sub>s,n</sub>	dB			C3:0; C1 ; C1,C6:(				C3:0; C2 ; C2, C6:			:1: 0; C3, 3, C5: 0			
Qhyst1 <sub>s</sub>	dB		(	)			(	)				)		
Treselection	S		(	)			(	)		0				
Sintrasearch	dB		not	sent		not sent					not	sent		
			Ce	II 4			Ce	II 5			Ce	II 6		
Timeslot		(	)	8	3	(	)	1	3	(	)	8	8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Chan	inel 1		Channel 1					Char	nel 1		
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74			
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4 C4, C6:0				C2:0; C5			1: 0; C6, C6, C4:0;			
Qhyst1 <sub>s</sub>	dB			)	-	C5, C4:0; C5, C6:0						)	-	
Treselection	S		(	)		0				0				
Sintrasearch	dB		not	sent			not	sent			not	sent		
I <sub>oc</sub>	dBm/3, 84 MHz		-70											
Propagation Condition			AWGN											

Table A.5.6: Cell re-selection single carrier multi-cell case

# A5.5.1.1.2 1.28Mcps TDD option

(void)- This test is to verify the requirement for the cell re-selection delay in CELL PCH state in section 5.5.2.2.

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.5A and A.5.6A.

# Table A.5.5A: General test parameters for Cell Re-selection single carrier multi-cell case

Pa	rameter	Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5,	
			<u>Cell6</u>	
Final condition	Active cell		Cell2	
	<u>HCS</u>		Not used	
<u>UE_TXPW</u>	<u> R MAX RACH</u>	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in the test.
<u>Qr</u>	<u>xlevmin</u>	<u>dBm</u>	<u>-103</u>	The value shall be used for all cells in the test.
	ce Class (ASC#0) stence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	<u>T<sub>SI</sub></u>	<u>s</u>	<u>1.28</u>	The value shall be used for all cells in the test.
DRX o	cycle length	<u>s</u>	<u>1.28</u>	The value shall be used for all cells in the test.
	<u>T1</u>		<u>15</u>	
	<u>T2</u>	<u>s</u>	<u>15</u>	

### Table A.5.6A: Cell re-selection single carrier multi-cell case

Parameter	Unit		Ce	II <u>1</u>			Ce	<u>   2</u>			Ce	II <u>3</u>		
Timeslot Number		(	<u>0                                    </u>				0	DW	PTS		0	DW	PTS	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
UTRA RF Channel			Channel 1			Channel 1				Channel 1				
Number								<u></u>						
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			
DwPCH_Ec/lor	<u>dB</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	
PCCPCH RSCP	<u>dBm</u>	<u>-64</u>	<u>-66</u>			<u>-66</u>	<u>-64</u>			-74	-74			
<u>Qoffset1<sub>s,n</sub></u>	<u>dB</u>			<u>C3:0; C</u> ; C1,C6:			<u>1: 0; C2,</u> 2, C5: 0				<u>1: 0; C3,</u> C3, C5: 0			
Qhyst1 <sub>s</sub>	dB			0	_			)				)		
Treselection	S			0			(	)				0		
\$intrasearch	dB		not	sent			not	sent			not	sent		
			Ce	ll 4			Ce	ll <u>5</u>			Ce	<u>ll 6</u>		
<u>Timeslot</u>			<u>)</u>		PTS	<u>0</u> <u>DWPTS</u>					0	DW	PTS	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
UTRA RF Channel Number			<u>Char</u>	nnel 1		Channel 1				Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
DwPCH_Ec/lor	dB			0	0			0	0			0	0	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74			
Qoffset1 <sub>s.n</sub>	<u>dB</u>		<u>C4, C1: 0; C4, C2:0; C4,C3:0</u> C4, C5:0; C4, C6:0				<u>1: 0; C5,</u> C5, C4:0;				<u>1: 0; C6,</u> C6, C4:0;			
Qhyst1 <sub>s</sub>	dB			0	-			)				)	-	
Treselection	S		0				(	0			(	)		
\$intrasearch	dB		not sent				not sent				not sent			
Ioc	<u>dBm/1.</u> <u>28 MHz</u>		<u>-70</u>											
Propagation Condition			AWGN											

# A.5.5.1.2 Test Requirements

### A5.5.1.2.1 for 3.84Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the CELL UPDATE message with cause "cell reselection" in cell 2.

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateTDD} + T_{SI}\text{, where:}$ 

TevaluateTDDA DRX cycle length of 1280ms is assumed for this test case, this leads to a Tevaluate TDD of 6.4s<br/>according to Table 4.1 in section 4.2.2.7.T<sub>SI</sub>Maximum repetition period of relevant system info blocks that needs to be received by the UE to

camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

### A5.5.1.2.2 1.28Mcps TDD option

void The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send SYNCH-UL sequence in the UpPTS for sending the CELL UPDATE message with cause "cell reselection" in cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateNTDD} + T_{SI}$ , where:

 $\frac{T_{evaluateNTDD}:}{according to Table 4.1A in section 4.2.} A DRX cycle length of 1280ms is assumed for this test case, this leads to a T_{evaluate NTDD} of 6.4s$ 

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

This gives a total of 7.68 s, allow 8s in the test case.

# A.5.5.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

A.5.5.2.1 Test Purpose and Environment

# A.5.5.2.1.1 for 3.84Mcps TDD option

This test is to verify the requirement for the cell re-selection delay in CELL\_PCH state in section 5.5.2.

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.7 and A.5.8.

Table A.5.7: General test parameters for Cell Re-selection in Multi carrier case
----------------------------------------------------------------------------------

Р	arameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
	HCS		Not used	
UE_TXP	WR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
(	Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
	vice Class (ASC#0) sistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T <sub>SI</sub>	S	1.28	The value shall be used for all cells in the test.
DRX	cycle length	S	1.28	The value shall be used for all cells in the test.
	T1		30	
	T2	S	15	

### Table A.5.8: Cell re-selection multi carrier multi cell case

Parameter	Unit		Ce	II 1			Ce	ll 2		Cell 3				
Timeslot Number		C	0 8			(	)	8	3	(	0	8	8	
		T1	T1 T2 T1 T2				T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel			Channel 1			Channel 2				Channel 1				
Number PCCPCH_Ec/lor	dB	-3												
SCH Ec/lor	dB dB	-3 -9	-3 -9	-9	-9	-3 -9	-3 -9	-9	-9	-3 -9	-3 -9	-9	-9	
	uБ	-9	-9	-9	-9	-9	-9	-9 5	-9	-9 10	-9 10	-9 10	-9 10	
SCH_t <sub>offset</sub> PICH_Ec/lor		0	0	-3	-3	5	5	-3	-3	10	10	-3	-3	
OCNS_Ec/lor	dB	2.40	2.10	-		2.42	2.40	-		2.10	2.40			
	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3	
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76			
Qoffset1 <sub>s,n</sub>	dB			C3:0; C1 C1, C6:				C3:0; C2 C2, C6:				C2:0; C3; C3; C3; C3; C6;		
Qhyst1 <sub>s</sub>	dB		(	,	-			)	-			)	-	
Treselection	S		(	)			(	)			(	)		
Sintrasearch	dB		not	sent			not	sent			not	sent		
Sintersearch	dB			sent				sent				sent		
			Ce					II 5				11 6		
Timeslot		C	)	8	3	(	)	8	3	(	0	8	8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel			Char	nol 1			Chor	nol 2			Char	nnel 2		
Number			Char			Channel 2								
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76			
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4 C4, C6:0				C2:0; C5 C5, C6:				C2:0; C6 C6, C5:		
Qhyst1 <sub>s</sub>	dB			)	-			)	-			)	-	
Treselection	S		(	)			(	)			(	)		
Sintrasearch	dB		not	sent		not sent					not	sent		
Sintersearch	dB			sent				sent				sent		
I <sub>oc</sub>	dBm/3, 84 MHz					-70								
Propagation Condition			AWGN											

# A.5.5.2.1.2 for 1.28Mcps TDD option

(void) This test is to verify the requirement for the cell re-selection delay in CELL PCH state in section 5.5.2.2.

This scenario implies the presence of 2 carriers and 6 cells as given in Table A.5.7A and A.5.8A.

## Table A.4.3A: General test parameters for Cell Re-selection in Multi carrier case

Pa	rameter	Unit	Value	Comment
Initial condition	Active cell		<u>Cell1</u>	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5,	
			<u>Cell6</u>	
Final condition	Active cell		<u>Cell2</u>	
	<u>HCS</u>		Not used	
<u>UE_TXPW</u>	<u> /R_MAX_RACH</u>	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in
				the test.
<u>Qr</u>	xlevmin	<u>dBm</u>	<u>-103</u>	The value shall be used for all cells in
				the test.
	ice Class (ASC#0)			Selected so that no additional delay is
- Persis	stence value		<u>1</u>	caused by the random access
				procedure. The value shall be used for
				all cells in the test.
	<u>T<sub>SI</sub></u>	<u>s</u>	<u>1.28</u>	The value shall be used for all cells in
				the test.
DRX o	<u>cycle length</u>	<u>s</u>	<u>1.28</u>	The value shall be used for all cells in
				the test.
	<u>T1</u>	<u>s</u>	<u>30</u>	
	<u>T2</u>	<u>s</u>	<u>15</u>	

Parameter Parameter	<u>Unit</u>			<u>ell 1</u>			<u>Ce</u>	<u>ll 2</u>				<u>II 3</u>	
Timeslot Number			<u>0                                    </u>				<u>)</u>		<u>PTS</u>		<u>0</u>	DWPTS	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1 T2 T1 T2</u>			<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
<u>UTRA RF Channel</u>			Channel 1				<u>Char</u>	nel 2		Channel 1			
<u>Number</u>								-	1				
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>10</u>	<u>7</u>	<u>10</u>	<u>7</u>	<u>7</u>	<u>10</u>	<u>7</u>	<u>10</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>
PCCPCH RSCP	dBm	-63	-66			-66	-63			-74	-74		
Qoffset1 <sub>s,n</sub>	dB	C1, C	2: 0; C1,	C3:0; C	1,C4:0			C2, C3:			1: 0; C3,		
<u>QUISELI<sub>s,n</sub></u>	<u>ub</u>	(	C1, C5:0	<u>; C1, C6:</u>	<u>0</u>	<u>C2,C</u>	4:0C2, C	<u>5:0; C2,</u>	<u>C6:0</u>	(	<u>C3, C5:0;</u>	C3, C6:	0
<u>Qhyst1</u> s	<u>dB</u>			<u>0</u>				)			<u>(</u>	<u>)</u>	
Treselection	<u>s</u>			<u>0</u>			(	<u>)</u>			(	<u>)</u>	
<u>\$intrasearch</u>	<u>dB</u>		<u>not</u>	<u>sent</u>			not	<u>sent</u>			not	<u>sent</u>	
<u>Sintersearch</u>	<u>dB</u>			<u>sent</u>				<u>sent</u>		not sent			
				<u>ell 4</u>		<u>Cell 5</u>						<u>ll 6</u>	
<u>Timeslot</u>		-	<u>)</u>		PTS	0 DWPTS				0 DWPTS			
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel</u>			<u>Cha</u>	nnel			<u>Char</u>	nel 2			<u>Cha</u>	nnel	
<u>Number</u>			1		1			1	1		1	1	T
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>		
<u>DwPCH_Ec/lor</u>	<u>dB</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>
<u>P¢CPCH RSCP</u>	<u>dBm</u>	-74	-74			-74	-74			-74	-74		
Qoffset1 <sub>s,n</sub>	<u>dB</u>			<u>C2:0; C4</u> ; C4, C6:				C2:0; C5 C5, C6:			<u>1: 0; C6,</u> C6, C4:0;		
Qhyst1 <sub>s</sub>	dB			0	-			)				)	_
Treselection	S			0			(	)			(	)	
\$intrasearch	dB		not	sent		not sent				not sent			
Sintersearch	dB		not	sent		not sent				not sent			
I <sub>oc</sub>	<u>dBm/3,</u> 84 MHz		<u>-70</u>										
Propagation Condition			AWGN										

#### Table A.4.4A: Cell re-selection multi carrier multi cell case

# A.5.5.2.2 Test Requirements

# A.5.5.2.2.1 for 3.84Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the CELL UPDATE message with cause "cell reselection" in cell 2.

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateTDD} + T_{SI}$ , where:

 $T_{evaluateTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluate TDD}$  of 6.4s according to Table 4.1 in section 4.2.2.7.

T<sub>SI</sub> Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

# A.5.5.2.2.2 for 1.28Mcps TDD option

(void) The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the SYNCH-UL sequence in the UpPTS for sending the CELL UPDATE message with cause "cell reselection" in cell 2.

The cell re-selection delay shall be less than 8 s.

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

#### NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateNTDD} + T_{SI}$ , where:

 $\frac{T_{evaluateNTDD}}{A DRX cycle length of 1280ms is assumed for this test case, this leads to a T_{evaluate NTDD} of 6.4s}{according to Table 4.1A in section 4.2.}$ 

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

This gives a total of 7.68 s, allow 8s in the test case.

R4-020661

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

						CR-Form-v5
		CHAN	IGE RE	QUEST		
ж	<mark>25.123</mark>	CR 197	ж rev	<b>-</b> # C	urrent versi	<sup>on:</sup> 4.4.0 <sup>#</sup>
For <u>HELP</u> on t	ising this fo	rm, see bottom	of this page of	or look at the p	op-up text o	over the X symbols.
Proposed change	affects: ೫	(U)SIM	ME/UE X	Radio Acce	ss Network	Core Network
Title: #	Introduct	ion of TDD/TDD	o cell reselect	ion in URA_P(	CH	
Source: ¥	RAN WG	4				
Work item code: ₩		-RF			<i>Date:</i>	17/5/2002
Category: अ Reason for chang	F (con A (co. B (ad C (fur D (ed Detailed ex be found in	the following cate rection) rresponds to a co dition of feature), actional modification planations of the 3GPP <u>TR 21.900</u> est cases are s	orrection in an e ion of feature) n) above categor <u>0</u> .	earlier release) ies can	2 R96 ( R97 ( R98 ( R99 ( REL-4 ( REL-5 (	he following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)
Summary of chan	ge: <sup>ቌ</sup> Intro	duction of test	cases for TDI	D/TDD cell res	<mark>election in l</mark>	JRA_PCH.
Consequences if not approved:	Isola		<u>alysis:</u> Introdu	ction of test ca	ses where	d. the specification was like indicated in the
Clauses affected:	ж <mark>А.5.</mark>	6				
Other specs affected:	X T	ther core speci est specification &M Specification	าร	¥ 34.122		
Other comments:	ដ <mark>្ឋ</mark> Equ	ivalent CRs in c	other Release	s: CR198 cat.	A to 25.123	3 v5.0.0

### How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked **#** contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

# A.5.6 Cell Re-selection in URA\_PCH

# A.5.6.1 Scenario 1: TDD/TDD cell re-selection single carrier case

# A.5.6.1.1 Test Purpose and Environment

# A.5.6.1.1.1 for 3.84Mcps TDD option

This test is to verify the requirement for the cell re-selection delay in URA\_PCH state in section 5.6.2.

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.9 and A.5.10.

Cell1 and Cell2 shall belong to different UTRAN Registration Areas (URA).

#### Table A.5.9: General test parameters for Cell Re-selection single carrier multi-cell case

Para	meter	Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4,	
	-		Cell5, Cell6	
Final condition	Active cell		Cell2	
H	CS		Not used	
UE_TXPWR	_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxle	evmin	dBm	-102	The value shall be used for all cells in the test.
Access Service	e Class (ASC#0)			Selected so that no additional delay is caused by
- Persiste	ence value		1	the random access procedure. The value shall be
				used for all cells in the test.
Т	SI	S	1.28	The value shall be used for all cells in the test.
DRX cyc	cle length	S	1.28	The value shall be used for all cells in the test.
Т	1	S	15	
Т	2	S	15	

Parameter	Unit		Ce	ll 1			Ce	ll 2		Cell 3				
Timeslot Number			)		3	,	0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nel 1			Char	nel 1			Char	nel 1		
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1	
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74			
Qoffset1 <sub>s,n</sub>	dB			C3:0; C1 ; C1,C6:				C3:0; C2 ; C2, C6:		C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0				
Qhyst1 <sub>s</sub>	dB			)				)		0				
Treselection	S		(	)			(	)			(	)		
Sintrasearch	dB		not	sent			not	sent			not	sent		
			Ce	II 4			Ce	II 5			Ce	ll 6		
Timeslot		(	)	3	3	(	D	8	8	(	0	8	8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nel 1			Char	nel 1		Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74			
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4				C2:0; C5 C5, C6:			1: 0; C6, C6, C4:0;			
Qhyst1 <sub>s</sub>	dB			)	•			)	-			)	-	
Treselection	S		(	)		0				0				
Sintrasearch	dB		not	sent			not	sent			not	sent		
I <sub>oc</sub>	dBm/3, 84 MHz			-		1		70		1				
Propagation Condition							AM	/GN						

Table A.5.10: Cell re-selection single carrier multi-cell case

# A.5.6.1.1.2 for 1.28Mcps TDD option

(void) This test is to verify the requirement for the cell re-selection delay in URA PCH state in section 5.6.2.2.

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.9A and A.5.10A.

Cell1 and Cell2 shall belong to different UTRAN Registration Areas (URA).

# Table A.5.9A: General test parameters for Cell Re-selection single carrier multi-cell case

Pa	rameter	Unit	Value	Comment				
Initial condition	Active cell		Cell1					
	Neighbour cells		Cell2, Cell3,Cell4, Cell5,					
			<u>Cell6</u>					
Final condition	Active cell		Cell2					
	<u>HCS</u>		Not used					
<u>UE_TXPW</u>	<u> R MAX RACH</u>	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in the test.				
<u>Qr</u>	<u>xlevmin</u>	<u>dBm</u>	<u>-103</u>	The value shall be used for all cells in the test.				
Access Service Class (ASC#0) Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.				
<u>Tsi</u>		<u>s</u>	<u>1.28</u>	The value shall be used for all cells in the test.				
DRX o	cycle length	<u>s</u>	<u>1.28</u>	The value shall be used for all cells in the test.				
	<u>T1</u>	<u>S</u>	<u>15</u>					
	<u>T2</u>	<u>s</u>	<u>15</u>					

### Table A.5.10A: Cell re-selection single carrier multi-cell case

Parameter	Unit		Ce	<u>II 1</u>			Ce	ll 2			Ce	II <u>3</u>		
Timeslot Number			<u>0</u>	DW	PTS		0	DW	PTS		0	DW	PTS	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
UTRA RF Channel			Char	nnel 1			Char	nel 1			Char	nel 1		
Number				<u></u>										
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>		-	<u>-3</u>	<u>-3</u>		-	<u>-3</u>	<u>-3</u>		-	
DwPCH_Ec/lor	<u>dB</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	
PCCPCH RSCP	dBm	<u>-64</u>	-66			<u>-66</u>	<u>-64</u>			-74	-74			
<u>Qoffset1<sub>s,n</sub></u>	<u>dB</u>			<u>C3:0; C</u> ; C1,C6:			<u>1: 0; C2,</u> 2, C5: 0				<u>C3, C1: 0; C3, C2:0; C3,C4:0</u> C3, C5: 0; C3, C6:0			
Qhyst1 <sub>s</sub>	dB			0				)		0				
Treselection	<u>s</u>		_	0			(	)		0				
\$intrasearch	dB		not	<u>sent</u>			not	sent		not sent				
			Ce	<b>II 4</b>			Ce	<u>II 5</u>			Ce	<u>ll 6</u>		
<u>Timeslot</u>			<u>0</u>		<u>PTS</u>	<u>0</u> <u>DWPTS</u>					<u>0</u>	DW	PTS	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
UTRA RF Channel Number			<u>Char</u>	nnel 1		Channel 1				Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
DwPCH_Ec/lor	dB			0	<u>0</u>			<u>0</u>	0			<u>0</u>	0	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74			
Qoffset1 <sub>s.n</sub>	dB			C2:0; C4; C4; C6:			<u>1: 0; C5,</u> C5, C4:0;				1: 0; C6, C6, C4:0;			
Qhyst1 <sub>s</sub>	dB			) <u>0 1, 00.</u> )	<u> </u>			<u> </u>	<u> </u>			<u> </u>	<u> </u>	
Treselection	S			0				)				)		
Sintrasearch	dB		not	sent			not	sent		not sent				
Ioc	<u>dBm/1.</u> 28 MHz							70		·				
Propagation Condition			AWGN											

# A.5.6.1.2 Test Requirements

### A.5.6.1.2.1 for 3.84Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the URA UPDATE message with URA update cause value "change of URA" in cell 2.

The cell re-selection delay shall be less than 8 s.

#### NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateTDD} + T_{SI}$ , where:

 $T_{evaluateTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluateTDD}$  of 6.4s according to Table 4.1 in section 4.2.2.7.

T<sub>SI</sub> Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

### A.5.6.1.2.2 for 1.28Mcps TDD option

(void) The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send SYNCH-UL sequence in the UPPTS for sending the URA UPDATE message with URA update cause value "change of URA" in cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE:

<u>The cell re-selection delay can be expressed as:  $T_{evaluateNTDD} + T_{SI}$ , where:</u>

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

This gives a total of 7.68 s, allow 8s in the test case.

# A.5.6.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

# A.5.6.2.1 Test Purpose and Environment

#### A.5.6.2.1.1 for 3.84Mcps TDD option

This test is to verify the requirement for the cell re-selection delay in URA\_PCH state in section 5.6.2.

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.11 and A.5.12.

# Table A.5.11: General test parameters for Cell Re-selection in Multi carrier case

Para	meter	Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
H	CS		Not used	
UE_TXPWR	_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxle	evmin	dBm	-102	The value shall be used for all cells in the test.
	e Class (ASC#0) ence value		1	Selected so that no additional delay is caused by the random access procedure. The value
				shall be used for all cells in the test.
Т	SI	S	1.28	The value shall be used for all cells in the test.
DRX cycle length		S	1.28	The value shall be used for all cells in the test.
T1		S	30	
Т	2	S	15	

## Table A.5.12: Cell re-selection multi carrier multi cell case

Parameter	Unit		Ce	ll 1			Ce	ll 2			Ce	II 3	
Timeslot Number		C		8			)		3	(	)		3
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Chan	inel 1			Char	nel 2			Char	nel 1	
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76		
Qoffset1 <sub>s,n</sub>	dB			C3:0; C1 C1, C6:0				; C2, C3: 5:0; C2,				C2:0; C3 C3, C6:	
Qhyst1 <sub>s</sub>	dB		(	)			(	)			(	)	
Treselection	S		(	)			(	)		0			
Sintrasearch	dB		not	sent			not	sent		not sent			
Sintersearch	dB		not	sent			not	sent			not	sent	
		Cell 4 Cell 5								Ce	II 6		
Timeslot		C		8	3	(	0 8			(	)	8	3
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Chan	nel 1			Char	nel 2			Char	nel 2	
PCCPCH_Ec/lor	dB	-3	-3			-3 -3				-3 -3			
SCH Ec/lor	dB	-3 -9	-3 -9	-9	-9	-3	-3	-9	-9	-3	-3	-9	-9
SCH_EC/IOI	uр	-9 15	-9 15	- <u>9</u> 15	-9 15	-9 20	20	20	20	-9 25	-9 25	-9 25	-9 25
PICH_Ec/lor	dB	15	15	-3	-3	20	20	-3	-3	20	20	-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76		
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4 C4, C6:0				C2:0; C5; C5; C6;				C2:0; C6 C6, C5:	
Qhyst1 <sub>s</sub>	dB		(	)			(	C			(	)	
Treselection	S		(	)			(	C			(	)	
Sintrasearch	dB		not	sent			not	sent		not sent			
Sintersearch	dB		not	sent			not	sent			not	sent	
I <sub>oc</sub>	dBm/3, 84 MHz						-7	70					
Propagation Condition							AW	/GN					

# A.5.6.2.1.2 1.28Mcps TDD option

(void) This test is to verify the requirement for the cell re-selection delay in URA PCH state in section 5.6.2.2.

This scenario implies the presence of 2 carriers and 6 cells as given in Table A.5.11A and A.5.12A.

Cell1 and Cell2 shall belong to different UTRAN Registration Areas (URA).

#### Table A.5.11A: General test parameters for Cell Re-selection in Multi carrier case

Pa	rameter	Unit	Value	<u>Comment</u>					
Initial condition	Active cell		Cell1						
	Neighbour cells		Cell2, Cell3,Cell4, Cell5,						
			<u>Cell6</u>						
Final condition	Active cell		Cell2						
	HCS		Not used						
<u>UE_TXPW</u>	<u> R MAX RACH</u>	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in					
				the test.					
<u>Qr</u>	<u>xlevmin</u>	<u>dBm</u>	<u>-103</u>	The value shall be used for all cells in					
				the test.					
	ice Class (ASC#0)			Selected so that no additional delay is					
<u>- Persis</u>	stence value		<u>1</u>	caused by the random access					
				procedure. The value shall be used for					
				all cells in the test.					
	<u>T<sub>SI</sub></u>	<u>S</u>	<u>1.28</u>	The value shall be used for all cells in					
				the test.					
DRX o	DRX cycle length		<u>1.28</u>	The value shall be used for all cells in					
				the test.					
	<u>T1</u>	<u>S</u>	<u>30</u>						
	<u>T2</u>	<u>s</u>	15						

Parameter	Unit		Ce	II 1			Ce	II <u>2</u>			Ce	II <u>3</u>		
Timeslot Number			)	DW	PTS		0	DW	PTS	-	0	DW	PTS	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
UTRA RF Channel			<u>Char</u>	nnel 1			Chan	nel 2			<u>Char</u>	nnel 1		
<u>Number</u>			-	-			-	-				-		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			
DwPCH_Ec/lor	<u>dB</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>10</u>	<u>7</u>	<u>10</u>	<u>7</u>	<u>7</u>	<u>10</u>	<u>7</u>	<u>10</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	
PCCPCH RSCP	dBm	-63	-66			-66	-63			-74	-74			
Qoffset1 <sub>s.n</sub>	dB	C1, C	2: 0; C1,	C3:0; C	1,C4:0	C	2, C1: 0;	C2, C3:	0;	C3, C	1: 0; C3,	C2:0; C3	3,C4:0	
<u>QOIISELI<sub>s,n</sub></u>	<u>ub</u>	(	C1, C5:0	<u>; C1, C6:</u>	0	<u>C2,C</u>	4:0C2, C	<u>5:0; C2,</u>	C6:0	(	C3, C5:0;	<u>C3, C6:</u>	0	
<u>Qhyst1</u> s	<u>dB</u>			<u>0</u>			(	)			(	<u>0</u>		
Treselection	<u>S</u>			<u>0</u>			<u>(</u>	<u>)</u>			(	<u>0</u>		
<u>\$intrasearch</u>	<u>dB</u>		<u>not</u>	<u>sent</u>			not	<u>sent</u>		not sent				
<u>Sintersearch</u>	<u>dB</u>			<u>sent</u>				<u>sent</u>				sent		
		<u>Cell 4</u>					<u>Ce</u>					<u>ll 6</u>		
Timeslot			)		PTS		0		<u>PTS</u>		<u>0</u>		<u>PTS</u>	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
UTRA RF Channel			<u>Cha</u>	innel			<u>Char</u>	<u>nel 2</u>			<u>Cha</u>	nnel		
Number				r	1			1	1			r		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>		-	<u>-3</u>	<u>-3</u>	-	-	<u>-3</u>	<u>-3</u>			
DwPCH_Ec/lor	<u>dB</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	
PCCPCH RSCP	<u>dBm</u>	<u>-74</u>	-74			<u>-74</u>	-74			<u>-74</u>	<u>-74</u>			
Qoffset1 <sub>s,n</sub>	<u>dB</u>			C2:0; C4; C6:			<u>1: 0; C5,</u> C5, C4:0;				1: 0; C6,			
Qhyst1 <sub>s</sub>	dB	<u> </u>		<u>, 04, 00.</u> 0	<u>0</u>	<u> </u>	<u>, 55, 64.0,</u> (		<u>0</u>	<u>C6, C4:0; C6, C5:0</u> 0				
Treselection	s s			<u>0</u> 0				<u>)</u>				<u>)</u>		
Sintrasearch	dB		-	<u>sent</u>				<u>s</u> ent		not sent				
Sintersearch	dB			<u>sent</u>				sent		not sent				
	<u>dBm/3,</u>		<u></u>	<u></u>		1		<u>30111</u> 70		1	<u></u>	<u></u>		
$I_{oc}$	84 MHz													
Propagation							AW	/GN						
<u>Condition</u>														

#### Table A.5.12A: Cell re-selection multi carrier multi cell case

# A.5.6.2.2 Test Requirements

# A.5.6.2.2.1 3.84Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the URA UPDATE message with URA update cause "change of URA" in cell 2.

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateTDD} + T_{SI}$ , where:

 $T_{evaluateTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluateTDD}$  of 6.4s according to Table 4.1 in section 4.2.2.7.

T<sub>SI</sub> Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

# A.5.6.2.2.2 1.28Mcps TDD option

(void) The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the SYNCH-UL sequence in the UPPTS for sending the URA UPDATE message with URA update cause "change of URA" in cell 2.

The cell re-selection delay shall be less than 8 s.

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

#### NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateNTDD} + T_{SI}$ , where:

 $\frac{T_{evaluateNTDD}}{A DRX cycle length of 1280ms is assumed for this test case, this leads to a T_{evaluate NTDD} of 6.4s}{according to Table 4.1A in section 4.2.}$ 

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

This gives a total of 7.68 s, allow 8s in the test case.

R4-020662

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

	CR-Form-v5.1
	CHANGE REQUEST
ж	<b>25.123</b> CR <b>198 # rev</b> - <sup><b>#</b> Current version: <b>5.0.0</b> <sup>#</sup></sup>
For <u>HELP</u> on	using this form, see bottom of this page or look at the pop-up text over the $#$ symbols.
Proposed change	e affects: # (U)SIM ME/UE X Radio Access Network Core Network
Title:	Introduction of TDD/TDD cell reselection in URA_PCH
Source:	f RAN WG4
Work item code:	t <u>LCRTDD-RF</u> <b>Date: #</b> 17/5/2002
Category: 8 Reason for chang Summary of chang	
Consequences if not approved:	<ul> <li>TDD/TDD cell reselection in URA_PCH would not be tested.</li> <li><u>Isolated Impact Analysis:</u> Introduction of test cases where the specification was not specified. Would not affect implementations behaving like indicated in the CR.</li> </ul>
Clauses affected:	¥ A.5.6
Other specs affected:	%       Other core specifications       %         Test specifications       0&M Specifications
Other comments:	# Equivalent CRs in other Releases: CR197 cat. F to 25.123 v4.4.0

### How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked **#** contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

# A.5.6 Cell Re-selection in URA\_PCH

# A.5.6.1 Scenario 1: TDD/TDD cell re-selection single carrier case

# A.5.6.1.1 Test Purpose and Environment

# A.5.6.1.1.1 for 3.84Mcps TDD option

This test is to verify the requirement for the cell re-selection delay in URA\_PCH state in section 5.6.2.

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.9 and A.5.10.

Cell1 and Cell2 shall belong to different UTRAN Registration Areas (URA).

#### Table A.5.9: General test parameters for Cell Re-selection single carrier multi-cell case

Para	meter	Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4,	
	-		Cell5, Cell6	
Final condition	Active cell		Cell2	
H	CS		Not used	
UE_TXPWR	_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxle	evmin	dBm	-102	The value shall be used for all cells in the test.
Access Service	e Class (ASC#0)			Selected so that no additional delay is caused by
- Persiste	ence value		1	the random access procedure. The value shall be
				used for all cells in the test.
Т	SI	S	1.28	The value shall be used for all cells in the test.
DRX cycle length		S	1.28	The value shall be used for all cells in the test.
Т	T1		15	
Т	2	S	15	

Parameter	Unit		Ce	ll 1			Ce	ll 2			Ce	II 3		
Timeslot Number		(	)		3	,	0		3	(	0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Chan	nel 1			Char	nel 1			Char	nel 1		
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1	
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74			
Qoffset1 <sub>s,n</sub>	dB			C3:0; C1 ; C1,C6:				C3:0; C2 ; C2, C6:		C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0				
Qhyst1 <sub>s</sub>	dB		(	)			(	)		0				
Treselection	S		(	)			(	C		0				
Sintrasearch	dB		not	sent			not	sent			not	sent		
			Ce	II 4			Ce	II 5			Ce	II 6		
Timeslot		(	)	8	3	(	0	8	3	(	0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Chan	nel 1			Char	nnel 1		Channel 1				
PCCPCH Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74			
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4				C2:0; C5 C5, C6:			1: 0; C6, C6, C4:0;			
Qhyst1 <sub>s</sub>	dB			)				)				)		
Treselection	S		(	)		0				0				
Sintrasearch	dB		not	sent			not	sent			not	sent		
I <sub>oc</sub>	dBm/3, 84 MHz					•	-	70		•				
Propagation Condition			AWGN											

Table A.5.10: Cell re-selection single carrier multi-cell case

# A.5.6.1.1.2 for 1.28Mcps TDD option

(void) This test is to verify the requirement for the cell re-selection delay in URA PCH state in section 5.6.2.2.

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.9A and A.5.10A.

Cell1 and Cell2 shall belong to different UTRAN Registration Areas (URA).

## Table A.5.9A: General test parameters for Cell Re-selection single carrier multi-cell case

Pa	rameter	Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5,	
			<u>Cell6</u>	
Final condition	Active cell		Cell2	
	<u>HCS</u>		Not used	
<u>UE_TXPW</u>	<u> R MAX RACH</u>	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in the test.
<u>Qr</u>	<u>xlevmin</u>	<u>dBm</u>	<u>-103</u>	The value shall be used for all cells in the test.
Access Service Class (ASC#0) Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	<u>T<sub>SI</sub></u>	<u>s</u>	<u>1.28</u>	The value shall be used for all cells in the test.
DRX o	cycle length	<u>s</u>	<u>1.28</u>	The value shall be used for all cells in the test.
	<u>T1</u>	<u>S</u>	<u>15</u>	
	<u>T2</u>	<u>s</u>	<u>15</u>	

#### Table A.5.10A: Cell re-selection single carrier multi-cell case

Parameter	Unit		Ce	<u>   1</u>			Ce	<u>ll 2</u>			Ce	<u>II 3</u>	
Timeslot Number		(	<u>)</u>	DW	PTS		<u>0</u>	DW	PTS		0	DW	PTS
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
UTRA RF Channel Number			<u>Char</u>	<u>nnel 1</u>		Channel 1					<u>Char</u>	nel 1	
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			<u>0</u>	<u>0</u>			<u>0</u>	0			0	<u>0</u>
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>
PCCPCH RSCP	<u>dBm</u>	-64	-66			-66	<u>-64</u>			-74	-74		
<u>Qoffset1<sub>s,n</sub></u>	<u>dB</u>			<u>C3:0; C</u> ; C1,C6:			<u>1: 0; C2,</u> 2, C5: 0				<u>1: 0; C3,</u> C3, C5: 0		
Qhyst1 <sub>s</sub>	dB		(	0			(	)			(	2	
Treselection	<u>S</u>			0			(	)				0	
<u>Sintrasearch</u>	<u>dB</u>			<u>sent</u>		not sent				not sent			
				<u>ll 4</u>		<u>Cell 5</u>						<u>ll 6</u>	
<u>Timeslot</u>		-	2		<u>PTS</u>	<u>0</u> <u>DWPTS</u>				-	0		<u>PTS</u>
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
UTRA RF Channel Number			<u>Char</u>	nnel 1		Channel 1				<u>Channel 1</u>			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			<u>0</u>	<u>0</u>			<u>0</u>	0			<u>0</u>	<u>0</u>
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>
PCCPCH RSCP	<u>dBm</u>	<u>-74</u>	-74			<u>-74</u>	<u>-74</u>			-74	-74		
<u>Qoffset1<sub>s,n</sub></u>	<u>dB</u>			<u>C2:0; C4</u> ; C4, C6:			<u>1: 0; C5,</u> C5, C4:0;				<u>1: 0; C6,</u> C6, C4:0;		
Qhyst1 <sub>s</sub>	dB			0		-		)	-			)	
Treselection	S			0			(	)		0			
Sintrasearch	<u>dB</u>		not	<u>sent</u>			not	sent		not sent			
I <sub>oc</sub>	<u>dBm/1.</u> <u>28 MHz</u>		<u>-70</u>										
Propagation Condition			AWGN										

# A.5.6.1.2 Test Requirements

#### A.5.6.1.2.1 for 3.84Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the URA UPDATE message with URA update cause value "change of URA" in cell 2.

The cell re-selection delay shall be less than 8 s.

#### NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateTDD} + T_{SI}$ , where:

 $T_{evaluateTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluateTDD}$  of 6.4s according to Table 4.1 in section 4.2.2.7.

T<sub>SI</sub> Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

#### A.5.6.1.2.2 for 1.28Mcps TDD option

(void) The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send SYNCH-UL sequence in the UPPTS for sending the URA UPDATE message with URA update cause value "change of URA" in cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE:

<u>The cell re-selection delay can be expressed as:  $T_{evaluateNTDD} + T_{SI}$ , where:</u>

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

This gives a total of 7.68 s, allow 8s in the test case.

# A.5.6.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

## A.5.6.2.1 Test Purpose and Environment

#### A.5.6.2.1.1 for 3.84Mcps TDD option

This test is to verify the requirement for the cell re-selection delay in URA\_PCH state in section 5.6.2.

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.11 and A.5.12.

# Table A.5.11: General test parameters for Cell Re-selection in Multi carrier case

Para	meter	Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
H	CS		Not used	
UE_TXPWR	_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxle	evmin	dBm	-102	The value shall be used for all cells in the test.
	e Class (ASC#0) ence value		1	Selected so that no additional delay is caused by the random access procedure. The value
				shall be used for all cells in the test.
Т	SI	S	1.28	The value shall be used for all cells in the test.
DRX cycle length		S	1.28	The value shall be used for all cells in the test.
]	T1		30	
1	2	S	15	

#### Table A.5.12: Cell re-selection multi carrier multi cell case

Parameter	Unit		Ce	ll 1			Ce	ll 2			Ce	II 3	
Timeslot Number		C		8	-		)		3		)	8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1		Channel 2					Char	nnel 1	
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76		
Qoffset1 <sub>s,n</sub>	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0						; C2, C3: 5:0; C2,				C2:0; C3; C3; C3; C3; C3; C6;	
Qhyst1 <sub>s</sub>	dB		(	C			(	C			(	C	
Treselection	S		(	C			(	C			(	C	
Sintrasearch	dB		not	sent			not	sent		not sent			
Sintersearch	dB		not	sent		not sent					not	sent	
			Ce	II 4		Cell 5					Ce	ll 6	
Timeslot		C		8	3	0 8			(	)	8	3	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1		Channel 2					Char	nnel 2	
PCCPCH Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76		
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4				C2:0; C5 C5, C6:		C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 <sub>s</sub>	dB		(	)				) )			(	)	
Treselection	S		(	C			(	C		0			
Sintrasearch	dB		not	sent		not sent				not sent			
Sintersearch	dB			sent		not sent						sent	
I <sub>oc</sub>	dBm/3, 84 MHz					•		70		•			
Propagation Condition							AW	/GN					

# A.5.6.2.1.2 1.28Mcps TDD option

(void) This test is to verify the requirement for the cell re-selection delay in URA PCH state in section 5.6.2.2.

This scenario implies the presence of 2 carriers and 6 cells as given in Table A.5.11A and A.5.12A.

Cell1 and Cell2 shall belong to different UTRAN Registration Areas (URA).

#### Table A.5.11A: General test parameters for Cell Re-selection in Multi carrier case

Pa	rameter	Unit	Value	<u>Comment</u>				
Initial condition	Active cell		Cell1					
	Neighbour cells		Cell2, Cell3,Cell4, Cell5,					
			<u>Cell6</u>					
Final condition	Active cell		<u>Cell2</u>					
	HCS		Not used					
<u>UE_TXPW</u>	<u> /R_MAX_RACH</u>	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in				
				the test.				
<u>Qr</u>	<u>xlevmin</u>	<u>dBm</u>	<u>-103</u>	The value shall be used for all cells in				
				the test.				
	ice Class (ASC#0)			Selected so that no additional delay is				
<u>- Persis</u>	stence value		<u><u>1</u></u>	caused by the random access				
				procedure. The value shall be used for				
				all cells in the test.				
	<u>T<sub>SI</sub></u>	<u>s</u>	<u>1.28</u>	The value shall be used for all cells in				
				the test.				
DRX o	DRX cycle length		<u>1.28</u>	The value shall be used for all cells in				
				the test.				
	<u>T1</u>	<u>S</u>	<u>30</u>					
	<u>T2</u>	S	15					

Parameter	Unit		<u>C</u> e	<u>II 1</u>			<u>C</u> e	<u>ll 2</u>			<u>C</u> e	II 3		
Timeslot Number		(		DW	PTS	<u>(</u>	)	DW	PTS	-	0	DW	PTS	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
UTRA RF Channel			Char	nnel 1			Chan	nel 2			Channel 1			
Number														
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			
DwPCH_Ec/lor	<u>dB</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>10</u>	<u>7</u>	<u>10</u>	<u>7</u>	<u>7</u>	<u>10</u>	<u>7</u>	<u>10</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	
PCCPCH RSCP	dBm	-63	-66			-66	-63			-74	-74			
Ooffoot1	dD	C1, C	2: 0; C1,	C3:0; C	1,C4:0	C	2, C1: 0;	C2, C3:	0;	C3, C	1: 0; C3,	C2:0; C	3,C4:0	
<u>Qoffset1<sub>s,n</sub></u>	<u>dB</u>	C	C1, C5:0;	; C1, C6:	0	<u>C2,</u> C	4:0C2, C	5:0; C2,	C6:0	(	C3, C5:0;	C3, C6:	0	
<u>Qhyst1</u> s	<u>dB</u>		(	<u>0</u>			(	)			(	<u>0</u>		
Treselection	<u>S</u>		(	<u>0</u>			(	)			(	<u>0</u>		
<u>Sintrasearch</u>	<u>dB</u>		<u>not</u>	<u>sent</u>			not	<u>sent</u>		not sent				
<u>Sintersearch</u>	<u>dB</u>			<u>sent</u>			not					<u>sent</u>		
				<u>ll 4</u>			<u>Ce</u>					<u>ll 6</u>		
<u>Timeslot</u>			)		PTS	<u>0                                    </u>			0 DWPTS					
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
UTRA RF Channel Number			<u>Cha</u>	<u>innel</u>		<u>Channel 2</u>				<u>Channel</u>				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
DwPCH_Ec/lor	dB			<u>0</u>	0			<u>0</u>	<u>0</u>			<u>0</u>	<u>0</u>	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74			
<u>Qoffset1<sub>s,n</sub></u>	<u>dB</u>			C2:0; C4; C4; C6;			<u>1: 0; C5,</u> C5, C4:0;			<u>C6, C1: 0; C6, C2:0; C6,C3:0</u> C6, C4:0; C6, C5:0				
Qhyst1 <sub>s</sub>	dB			0	<u> </u>		(		-			0	<u> </u>	
Treselection	S			0			(				(	0		
Sintrasearch	dB		not	sent			not	sent		not sent				
Sintersearch	dB		not	sent			not	sent		not sent				
I <sub>oc</sub>	<u>dBm/3,</u> 84 MHz		<u>-70</u>											
Propagation Condition							AW	/GN						

#### Table A.5.12A: Cell re-selection multi carrier multi cell case

# A.5.6.2.2 Test Requirements

## A.5.6.2.2.1 3.84Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the URA UPDATE message with URA update cause "change of URA" in cell 2.

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateTDD} + T_{SI}$ , where:

 $T_{evaluateTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluateTDD}$  of 6.4s according to Table 4.1 in section 4.2.2.7.

T<sub>SI</sub> Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

# A.5.6.2.2.2 1.28Mcps TDD option

(void) The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the SYNCH-UL sequence in the UPPTS for sending the URA UPDATE message with URA update cause "change of URA" in cell 2.

The cell re-selection delay shall be less than 8 s.

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

#### NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateNTDD} + T_{SI}$ , where:

 $\frac{T_{evaluateNTDD}}{A DRX cycle length of 1280ms is assumed for this test case, this leads to a T_{evaluate NTDD} of 6.4s}{according to Table 4.1A in section 4.2.}$ 

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

This gives a total of 7.68 s, allow 8s in the test case.

# R4-020663

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

[	CR-Form-v5.1
	CHANGE REQUEST
¥	<b>25.123</b> CR <b>199 # rev</b> - <b>#</b> Current version: <b>4.4.0 #</b>
For <u>HELP</u> on u	using this form, see bottom of this page or look at the pop-up text over the $#$ symbols.
Proposed change	affects: # (U)SIM ME/UE X Radio Access Network Core Network
Title: ೫	Correction of section 4
Source: अ	RAN WG4
Work item code: %	LCRTDD-RF Date: # 17/5/2002
Category: ₩	FRelease: %Rel-4Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D (editorial modification)R99D tetailed explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5
Reason for change	e: # Ambiguity exists in section 4.
Summary of chang	
Consequences if not approved:	<ul> <li>1. The requirements shall be remained as instable in core requirements.</li> <li>2. Incomplete test cases.</li> <li><u>Isolated Impact Analysis:</u> Correction of a requirement where the specification was ambiguous or not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.</li> </ul>
Clauses affected:	₩ <mark>4; A4</mark>
Other specs affected:	%       Other core specifications       %         X       Test specifications       34.122         O&M Specifications       0
Other comments:	ж

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

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

# 4 Idle Mode

# 4.1 Cell Selection

# 4.1.1 Introduction

After a UE has switched on and a PLMN has been selected, the Cell selection process takes place, as described in TS25.304. This process allows the UE to select a suitable cell where to camp on in order to access available services. In this process the UE can use stored information (*Stored information cell selection*) or not (*Initial cell selection*).

# 4.2 Cell Re-selection

# 4.2.1 Introduction

# 4.2.1.1 3.84 Mcps TDD option

The cell reselection procedure allows the UE to select a more suitable cell and camp on it.

When the UE is in either *Camped Normally state or Camped on Any Cell* state on a TDD cell, the UE shall attempt to identify, synchronise and monitor intra-frequency, inter-frequency and inter-RAT cells indicated in the measurement control system information of the serving cell. UE measurement activity is also controlled by measurement rules defined in TS25.304, allowing the UE to limit its measurement activity if certain conditions are fullfilled.

# 4.2.1.2 1.28 Mcps TDD option

The cell reselection procedure allows the UE to select a more suitable cell and camp on it.

When the UE is in <u>either Camped Normally state or Camped on Any Cell</u> state on a TDD cell, the UE shall attempt to <u>detect identify</u>, synchronise and monitor intra-frequency, inter-frequency and inter-RAT cells indicated in the measurement control system information of the serving cell. If the occasions/triggers occur, as specified in 25.304, the <u>UE shall perform the Cell Reselection Evaluation process.</u> UE measurement activity is also controlled by measurement rules defined in TS25.304, allowing the UE to limit its measurement activity if certain conditions are fullfilled.

# 4.2.2 Requirements

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

## 4.2.2.1.1 3.84 Mcps TDD option

The UE shall measure the PCCPCH RSCP level of the serving cell and evaluate the cell selection criterion  $S_{rxlev}$  defined in TS25.304 for the serving cell at least every DRX cycle. The UE shall filter the PCCPCH RSCP measurement of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureTDD}/2$  (see table 4.1).

If the UE has evaluated in  $N_{serv}$  successive measurements 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 the 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 TS25.304.

# 4.2.2.1.2 1.28 Mcps TDD option

The UE shall measure the PCCPCH RSCP level of the serving cell and evaluate the cell selection criterion S defined in TS25.304 for the serving cell once per at least every DRX cycle. The UE shall filter the PCCPCH RSCP level of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureNTDD}/2$  (see table 4.1A).

If the UE has evaluated in  $N_{serv}$  successive measurements <u>consecutive DRX cycles</u> 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 the 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 TS25.304.

# 4.2.2.2 Measurement of intra-frequency cells

#### 4.2.2.2.1 3.84 Mcps option

The UE shall measure PCCPCH RSCP at least every  $T_{measureTDD}$  (see table 4.1) for intra-frequency cells that are identified and measured according to the measurement rules.  $T_{measureTDD}$  is defined in Table 4.1. The UE shall filter PCCPCH 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  $T_{measureTDD}/2$ .

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  $T_{evaluateTDD}$  (see table 4.1), from the moment the intra-frequency cell became at least 2 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 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.

## 4.2.2.2.2 1.28 Mcps option

The UE shall measure PCCPCH RSCP at least every  $T_{measureNTDD}$  (see table 4.1A) for intra-frequency cells that are identified and measured according to the measurement rules.  $T_{measureNTDD}$  is defined in Table 4.1A. The UE shall filter PCCPCH 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  $T_{measureNTDD}/2$ .

The filtering shall be such that the UE shall be capable of evaluating that an intra-frequency cell has become better <u>ranked</u> than the serving cell within  $T_{evaluateNTDD}$  (see table 4.1A), from the moment the intra-frequency cell became at least [2] dB better ranked than the current serving cell, provided that Treselection timer is set to zero and PCCPCH 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 Measurement of inter-frequency TDD cells

## 4.2.2.3.1 3.84 Mcps option

The UE shall measure PCCPCH RSCP at least every ( $N_{carrier}$ -1) \*  $T_{measureTDD}$  (see table 4.1) for inter-frequency cells that are identified and measured according to the measurement rules. The parameter  $N_{carrier}$  is the number of carriers used for TDD cells. The UE shall filter PCCPCH 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  $T_{measureTDD}/2$ .

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency cell has become better ranked than the serving cell within  $(N_{carrier}-1) * T_{evaluateTDD}$  from the moment the interfrequency 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 interfrequency 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 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.

# 4.2.2.3.2 1.28 Mcps option

The UE shall measure PCCPCH RSCP at least every  $(N_{carrier}-1) * T_{measureNTDD}$  (see table 4.1A) for inter-frequency cells that are identified and measured according to the measurement rules. The parameter  $N_{carrier}$  is the number of carriers used for 1.28 Mcps TDD OPTION cells. The maximum number of carriers is [3] including the carrier the UE is camped on. The UE shall filter PCCPCH 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  $T_{measureNTDD}/2$ .

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency cell has become better ranked than the serving cell within  $(N_{carrier}-1) * T_{evaluateNTDD}$  from the moment the inter-frequency cell became at least [3] dB better <u>ranked</u> 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 <u>ranked</u> 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.

# 4.2.2.3A 1.28 Mcps TDD to 3.84 Mcps TDD cell re-selection

This requirement only applies to 1.28 Mcps UEs supporting this mode.

The ranking of the low and high chip rate TDD cells shall be made according to the cell reselection criteria specified in TS25.304. The use of mapping functions is indicated in the broadcast.

The UE shall measure PCCPCH RSCP at least every  $N_{TDDcarrier} * T_{measureTDD}$  (see table 4.1A) for inter-frequency cells that are identified and measured according to the measurement rules. The parameter  $N_{carrier}$  is the number of carriers used for 3.84 Mcps TDD cells. The maximum number of carriers is 3. The UE shall filter PCCPCH RSCP measurements of each measured high chip rate 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 a high chip rate TDD cell has become better ranked than the serving cell within  $N_{TDDcarrier} * T_{evaluateTDD}$  from the moment the inter-frequency cell became at least [3] better ranked 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 Treselection timer has a non zero value and the inter-frequency 3.84Mcps TDD cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency 3.84Mcps TDD cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

# 4.2.2.4 Measurement of inter-frequency FDD cells

## 4.2.2.4.1 3.84 Mcps option

The UE shall measure the CPICH RSCP and CPICH Ec/Io of each FDD 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  $T_{measureFDD}$  (see table 4.1). The UE shall filter 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  $T_{measureFDD}/2$ ...

The filtering of CPICH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency cell has become better ranked than the serving cell within  $N_{carrierFDD} * T_{evaluateFDD}$  from the moment the interfrequency 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 than the current serving cell provided that Treselection timer is set to zero. The parameter  $N_{carrierFDD}$  is the number of carriers used for FDD cells.

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.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. If FDD cell has been ranked as the best cell and IE cell\_selection\_and\_reselection-quality\_measure is set to CPICH Ec/No, then UE shall perform a second ranking of the FDD cells using CPICH Ec/Io as the measurement quantity, before performing cell re-selection.

# 4.2.2.4.2 1.28 Mcps option

This requirement only applies to 1.28 Mcps UEs supporting this mode.

The UE shall measure the signal level-CPICH RSCP and CPICH Ec/Io of each FDD 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  $T_{measureFDD}$  (see table 4.1A). The UE shall filter CPICH RSCP measurements of each measured interfrequency cell using at least 2 measurements which are taken so that the time difference between the measurements is at least  $T_{measureFDD}/2$ . The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

CPICH RSCP is used as basic measurement quantity for cell ranking, the filtering <u>of CPICH RSCP</u> 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  $NFDD_{carrierFDD} * T_{evaluateFDD}$  from the moment the inter-frequency cell became at least [5] dB better <u>ranked</u> 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 than the current serving cell provided that Treselection timer is set to zero. The parameter  $N_{carrierFDD}$  is the number of carriers used for FDD cells.

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

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. If FDD cell has been ranked as the best cell and IE cell\_selection\_and\_reselection-quality\_measure is set to CPICH Ec/No, then UE shall perform a second ranking of the FDD cells using CPICH Ec/Io as the measurement quantity, before performing cell re-selection.

# 4.2.2.5 Measurement of inter-RAT GSM cells

## 4.2.2.5.1 3.84 Mcps option

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 cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measurements are required by the measurement rules in TS25.304, 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 re-selection criteria in TS25.304. 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 can not demodulate the BSIC of that GSM BCCH carrier.

# 4.2.2.5.2 1.28 Mcps option

The UE shall measure the signal level of <u>the GSM BCCH carrier of</u> 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 4.1A). The UE shall maintain a running average of 4 measurements for each cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measurements are required by the measurement rules in TS25.304, Tthe UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 best ranked strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell reselection criteria in TS25.304. (the best ranked according to the cell reselection criteria defined in TS25.304) at least every 30 seconds if GSM cells are measured according to the measurement rules. 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 can not demodulate the BSIC of that GSM BCCH carrier.

# 4.2.2.6 Evaluation of cell reselection criteria

#### 4.2.2.6.1 3.84 Mcps option

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 once every DRX cycle.

UE shall perform cell reselection immediately after the UE has found a better ranked suitable cell unless less than 1 second has elapsed from the moment the UE started camping on the current serving cell.

#### 4.2.2.6.2 1.28 Mcps option

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.

Cell reselection shall take place immediately after the UE has found a better <u>ranked</u> suitable cell unless the UE has made cell reselection within the last 1 second.

## 4.2.2.7 Maximum interruption time in paging reception

#### 4.2.2.7.1 3.84 Mcps option

UE shall perform the cell re-selection with minimum interruption in monitoring downlink channels for paging reception.

At intra-frequency cell re-selection, the UE shall monitor the downlink of current serving cell for paging reception until the UE is capable to start monitoring downlink channels of the target intra-frequency cell for paging reception. The interruption time shall not exceed 50 ms.

At inter-frequency and inter-RAT cell re-selection, the UE shall monitor the downlink of current serving cell for paging reception until the UE is capable to start monitoring downlink channels for paging reception of the target inter-frequency cell. For inter-frequency cell re-selection, the interruption time shall not exceed  $T_{SI}$  + 50 ms. For inter-RAT cell re-selection the interruption time shall not exceed  $T_{BCCH}$  + 50 ms.

 $T_{SI}$  is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS25.331 for a UTRAN cell.

 $T_{BCCH}$  is the maximum time allowed to read BCCH data from a GSM cell as defined in TS45.008.

These requirements assume sufficient radio conditions, so that decoding of system information can be made without errors.

DRX cycle length [s]	N <sub>serv</sub> (number of DRX cycles)	T <sub>measureTDD</sub> [s] (number of DRX cycles)	T <sub>evaluateTDD</sub> [s] (number of DRX cycles)	T <sub>measureFDD</sub> [s] (number of DRX cycles)	T <sub>evaluateFDD</sub> [s] (number of DRX cycles)	T <sub>measureGSM</sub> [s] (number of DRX cycles)
0.08	4	0.64 (8 DRX	2.56 (32 DRX	0.64 (8 DRX	2.56 (32 DRX	2.56 (32 DRX
		cycles)	cycles)	cycles)	cycles)	cycles)
0.16	4	0.64 (4)	2.56 (16)	0.64 (4)	2.56 (16)	2.56 (16)
0.32	4	1.28 (4)	5.12 (16)	1.28 (4)	5.12 (16)	5.12 (16)
0.64	4	1.28 (2)	5.12 (8)	1.28 (2)	5.12 (8)	5.12 (8)
1.28	2	1.28 (1)	6.4 (5)	1.28 (1)	6.4 (5)	6.4 (5)
2.56	2	2.56 (1)	7.68 (3)	2.56 (1)	7.68 (3)	7.68 (3)
5.12	1	5.12 (1)	10.24 (2)	5.12 (1)	10.24 (2)	10.24 (2)

Table 4.1: T<sub>measureTDD</sub>, T<sub>evaluateTDD</sub>, T<sub>measureFDD</sub>, T<sub>evaluateFDD</sub> and T<sub>measureGSM</sub>

In idle mode, UE shall support DRX cycles lengths 0.64, 1.28, 2.56 and 5.12 s, according to [16].

#### 4.2.2.7.2 1.28 Mcps option

UE shall perform the cell re-selection with minimum interruption in monitoring downlink channels for paging reception.

At intra-frequency cell re-selection, the UE shall monitor the downlink of current serving cell for paging reception until the UE is capable to start monitoring downlink channels of the target intra-frequency cell for paging reception. The interruption time shall not exceed [50] ms.

At inter-frequency and inter-RAT cell re-selection, the UE shall monitor the downlink of current serving cell for paging reception until the UE is capable to start monitoring downlink channels for paging reception of the target inter-frequency cell. For inter-frequency cell re-selection he interruption time must not exceed  $T_{SI} + [50]$  ms. For inter-Rat cell re-selection the interruption time must not exceed  $T_{BCCH}+[50]$  ms.

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

T<sub>BCCH</sub> is the maximum time allowed to read BCCH data from a GSM cell [20].

These requirements assume sufficient radio conditions, so that decoding of system information can be made without errors and does not take into account cell re-selection failure.

DRX cycle length [s]	N <sub>serv</sub> <u>{(DRX</u> <u>cycles)num</u> <del>ber of</del> <del>successive</del> <del>measureme</del> <del>nts]</del>	T <sub>measureNTDD</sub> [s] (number of DRX cycles)	T <sub>evaluateNTDD</sub> [s] (number of DRX cycles)	T <sub>measureTD</sub> <sub>D</sub> [s] (number of DRX cycles)	T <sub>evaluateTDD</sub> [s] (number of DRX cycles)	T <sub>measureFD</sub> <sub>D</sub> [S] (number of DRX cycles)	T <sub>evaluateFDD</sub> [s] (number of DRX cycles)	T <sub>measureGSM</sub> [s] (number of DRX cycles)
0.08	4	0.64 (8 DRX	2.56 (32 DRX	0.64 (8 DRX	2.56 (32 DRX	0.64 (8 DRX	2.56 (32 DRX	2.56 (32 DRX
		cycles)	cycles)	cycles)	cycles)	cycles)	cycles)	cycles)
0.16	4	0.64 (4)	2.56 (16)	0.64 (4)	2.56 (16)	0.64 (4)	2.56 (16)	2.56 (16)
0.32	4	1.28 (4)	5.12 (16)	1.28 (4)	5.12 (16)	1.28 (4)	5.12 (16)	5.12 (16)
0.64	4	1.28 (2)	5.12 (8)	1.28 (2)	5.12 (8)	1.28 (2)	5.12 (8)	5.12 (8)
1.28	2	1.28 (1)	6.4 (5)	1.28 (1)	6.4 (5)	1.28 (1)	6.4 (5)	6.4 (5)
2.56	2	2.56 (1)	7.68 (3)	2.56 (1)	7.68 (3)	2.56 (1)	7.68 (3)	7.68 (3)
5.12	1	5.12 (1)	10.24 (2)	5.12 (1)	10.24 (2)	5.12 (1)	10.24 (2)	10.24 (2)

Table 4.1A: T<sub>measureNTDD</sub>, T<sub>evaluateNTDD</sub>, T<sub>measureTDD</sub>, T<sub>evaluateTDD</sub>, T<sub>measureFDD</sub>, T<sub>evaluateFDD</sub> and T<sub>measureGSM</sub>

In idle mode, UE shall support DRX cycles lengths 0.64, 1.28, 2.56 and 5.12 s.

#### 4.2.2.8 Number of cells in cell lists

#### 4.2.2.8.1 3.84 Mcps option

For idle mode cell re-selection purposes, the UE shall be capable of monitoring:

- 32 intra-frequency cells (including serving cell), and
- 32 inter-frequency cells, including
  - TDD mode cells on maximum 2 additional TDD carriers, and
  - Depending on UE capability, FDD mode cells, distributed on up to 3 FDD carriers, and
- Depending on UE capability, 32 inter RAT GSM cells,

as indicated in cell information lists sent in system information (BCCH).

#### 4.2.2.8.2 1.28 Mcps option

The UE shall be capable of monitoring [32] intra frequency 1.28 Mcps TDD OPTION cells (including serving cell), [32] inter frequency cells including low and high chip rate TDD Mode cells and FDD Mode cells if FDD and/or high chip rate TDD is supported by the UE.

The 1.28 Mcps TDD OPTION inter frequency cells can be located on [x] additional frequencies besides the serving cell.

The inter frequency cells can be located on up to [x] carriers.

In addition the UE shall be able to monitor 32 GSM carriers if GSM is supported by the UE. UE measurement activity is controlled by measurement rules defined in in TS25.304, allowing the UE to limit its measurement activity if certain conditions are fulfilled.

For idle mode cell re-selection purposes, the UE shall be capable of monitoring:

- 32 intra-frequency cells (including serving cell), and
- 32 inter-frequency cells, including
  - TDD mode cells on maximum 3 additional TDD carriers, and
  - Depending on UE capability, FDD mode cells distributed on up to 3 FDD carriers, and
- Depending on UE capability, 32 GSM cells distributed on up to 32 GSM carriers,

as indicated in cell information lists sent in system information (BCCH).

# <Next Change>

# A.4 Idle Mode

# A.4.1 Cell selection

NOTE: This section is included for consistency with numbering with section 4; no test covering requirements exist.

# A.4.2 Cell Re-Selection

For each of the re-selection scenarios in section 4.2 a test is proposed.

For TDD/TDD cell reselection two scenarios are considered:

Scenario 1: Single carrier case

Scenario 2: Multi carrier case

# A.4.2.1 Scenario 1: TDD/TDD cell re-selection single carrier case

# A.4.2.1.1 Test Purpose and Environment

This test is to verify the requirement for the cell re-selection delay in the single carrier case reported in section 4.2.2.

## A.4.2.1.1.1 3.84 Mcps TDD option

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.4.1 and A.4.2. Cell 1 and cell 2 shall belong to different Location Areas.

Para	meter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4,	
			Cell5, Cell6	
Final condition	Active cell		Cell2	
H	ICS		Not used	
UE_TXPWF	R_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxl	evmin	dBm	-102	The value shall be used for all cells in the test.
	e Class (ASC#0)			Selected so that no additional delay is caused by
- Persist	ence value		1	the random access procedure. The value shall be
				used for all cells in the test.
-	Tsi	S	1.28	The value shall be used for all cells in the test.
DRX cycle length		S	1.28	The value shall be used for all cells in the test.
	T1	S	15	
	T2	S	15	

Parameter	Unit		Ce	ll 1			Ce	ll 2			Ce	II 3		
Timeslot Number		(	)	ε	3	(	)	1	3	(	)	1	3	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Chan	inel 1			Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1	
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74			
Qoffset1 <sub>s,n</sub>	dB			C3:0; C1 ; C1,C6:(				C3:0; C2; ; C2,C6:			1: 0; C3, C3, C5: 0			
Qhyst 1 <sub>s</sub>	dB			0				0				0		
Treselection	S		(	)			(	)		0				
Sintrasearch	dB		not	sent		not sent					not	sent		
			Ce	II 4			Ce	II 5			Ce	II 6		
Timeslot		(	)	8	3	0 8				(	)		3	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	inel 1		Channel 1				Channel 1				
PCCPCH Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74			
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4 C4, C6:0				C2:0; C5, C6:			1: 0; C6, C6, C4:0;			
Qhyst1 <sub>s</sub>	dB			)	-			)	-			)	-	
Treselection	S		(	)		0				0				
Sintrasearch	dB		not	sent		not sent					not	sent		
I <sub>oc</sub>	dBm/3, 84 MHz					L		70		L				
Propagation Condition			AWGN											

Table A.4.2: Cell re-selection single carrier multi-cell case

# A.4.2.1.1.2 1.28 Mcps TDD option

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.4.1A and A.4.2A. <u>The UE is requested to</u> monitor neighbouring cells on 1 carrier. Cell 1 and cell 2 shall belong to different Location Areas.

# Table A.4.1A: General test parameters for Cell Re-selection single carrier multi-cell case

Par	ameter	Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5,	
			Cell6	
Final condition	inal condition Active cell		Cell2	
	HCS		Not used	
UE_TXPW	UE_TXPWR_MAX_RACH		21	The value shall be used for all cells in the test.
Qr:	Qrxlevmin		-103	The value shall be used for all cells in the test.
Access Servio	ce Class (ASC#0)			Selected so that no additional
Persis	stence value	<del>01</del>	1	delay is caused by the random
				access procedure. The value shall
				be used for all cells in the test.
	T <sub>SI</sub>		1.28	The value shall be used for all cells in
				the test.
DRX c	DRX cycle length		1.28	The value shall be used for all cells in
				the test.
	T1	S	15	
	T2	S	15	

# Table A.4.2A: Cell re-selection single carrier multi-cell case

Parameter	Unit		Ce	II 1			Ce	ll 2		Cell 3				
Timeslot Number		(	)	DW	PTS	(	0	DW	PTS	(	0	DW	PTS	
		T1	T1 T2 T1 T2			T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Channel 1				Channel 1			Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
DwPCH_Ec/lor	dB			0	0			0	0			0	0	
$\hat{I}_{or}/I_{oc}$	dB	<del>[</del> 9 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	
P¢CPCH RSCP	dBm	<del>[</del> -64 <del>]</del>	<del>[</del> -66 <del>]</del>			<del>[</del> -66 <del>]</del>	<del>[</del> -64 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			
Qoffset1 <sub>s,n</sub>	dB			C3:0; C <sup>2</sup> ; C1,C6:			1: 0; C2, 2, C5: 0					C2:0; C3; C3; C3; C3; C3; C6;		
Qhyst1₅	dB		(	)			(	)			(	0		
Treselection	S		0				(	)				0		
Sintrasearch	dB		not sent				not sent				not sent			
			Cell 4				Cell 5				Ce	ll 6		
Timeslot			)		PTS	0 DWPTS			0 DWPTS					
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nel 1		Channel 1				Char	nnel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
DwPCH_Ec/lor	dB			0	0			0	0			0	0	
$\hat{I}_{or}/I_{oc}$	dB	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	
P¢CPCH RSCP	dBm	<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4		C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0				
Qhyst1 <sub>s</sub>	dB			)				)				0		
Treselection	S	0				0				0				
Sintrasearch	dB		not sent				not sent				not sent			
I <sub>oc</sub>	dBm/1. 28 MHz		-70											
Propagation Condition							AM	/GN						

#### A.4.2.1.2 Test Requirements

A.4.2.1.2.1 3.84 Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

#### NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateTDD} + T_{SI}$ , where:

 $T_{evaluateTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluateTDD}$  of 6.4s according to Table 4.1 in section 4.2.2.7.

T<sub>SI</sub> Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

#### A.4.2.1.2.2 1.28 Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send SYNCH-UL sequence in the UpPTS for sending the RRC CONNECTION REQUEST to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateNTDD} + T_{SI}$ , where:

- $T_{evaluateNTDD}$ : A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluate NTDD}$  of 6.4s according to Table 4.1A in section 4.2.
- T<sub>SI</sub>: Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

# A.4.2.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

## A.4.2.2.1 Test Purpose and Environment

This test is to verify the requirement for the cell re-selection delay in the multi carrier case reported in section 4.2.2.

#### A.4.2.2.1.1 3.84 Mcps TDD option

This scenario implies the presence of 2 carriers and 6 cells as given in Table A.4.3 and A.4.4. Cell 1 and cell 2 shall belong to different Location Areas.

# Table A.4.3: General test parameters for Cell Re-selection in Multi carrier case

Par	ameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	condition Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
I	HCS		Not used	
UE_TXPW	R_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrx	klevmin	dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test.
DRX cycle length		S	1.28	The value shall be used for all cells in the test.
T1		S	30	
	T2	S	15	

#### Table A.4.4: Cell re-selection multi carrier multi cell case

Parameter	Unit		Ce	ll 1			Ce	ll 2		Cell 3				
Timeslot Number		C	)	8	3	(	0 8			(	)	8	3	
		T1	T2	T1	T2	T1 T2 T1 T2			T1	T2	T1	T2		
UTRA RF Channel Number			Channel 1			Channel 2			Channel 1					
PCCPCH_Ec/lor	dB	-3				-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3	
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76			
Qoffset1 <sub>s,n</sub>	dB		C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0					C3:0; C2 C2, C6:				C2:0; C3; C3; C3; C3; C6;		
Qhyst1 <sub>s</sub>	dB		0				(	C			(	0		
Treselection	S		0				(	C			(	0		
Sintrasearch	dB		not sent				not sent				not sent			
Sintersearch	dB		not sent			not sent				not sent				
		Cell 4					Ce	II 5			Ce	ll 6		
Timeslot		C	0 8			(	0 8			(	)	8	3	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel			Chan	nel 1		Channel 2					Char	nnel 2		
Number				-						-3 -3				
PCCPCH_Ec/lor	dB	-3	-3	0		-3	-3			-			-	
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>	15	15	15	15	15	20	20	20	20	25	25	25	25	
PICH_Ec/lor	dB	0.40	0.40	-3	-3	0.40	0.40	-3	-3	0.40	0.40	-3	-3	
OCNS	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76			
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4 C4, C6:0		C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0				
Qhyst1 <sub>s</sub>	dB	0						)				0		
Treselection	S	0					(	C			(	0		
Sintrasearch	dB	not sent				not sent				not sent				
Sintersearch	dB		not	sent		not sent					not	sent		
I <sub>oc</sub>	dBm/3, 84 MHz		-70											
Propagation Condition							AW	/GN						

# A.4.2.2.1.2 1.28 Mcps TDD option

This scenario implies the presence of 2 carriers and 6 cells as given in Table A.4.3A and A.4.4A. <u>The UE is requested</u> to monitor neighbouring cells on 2 carriers. For this test purpose the broadcast repetition period of the target cell shall be [x] s. Cell 1 and cell 2 shall belong to different Location Areas.

#### Table A.4.3A: General test parameters for Cell Re-selection in Multi carrier case

Pa	rameter	Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
	HCS		Not used	
UE_TXPW	UE_TXPWR_MAX_RACH		21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-103	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test.
DRX cycle length		S	1.28	The value shall be used for all cells in the test.
	T1	S	30	
	T2	S	15	

Parameter	Unit		Ce	1			Ce	ll 2			Ce	ll 3	
Timeslot Number		C	)	DW	PTS	(	0	DW	PTS		)	DW	PTS
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel			Channel 1				Channel 2			Channel 1			
Number													
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
$\hat{I}_{or}/I_{oc}$	dB	<u>[10</u> 9]	<del>[</del> 7 <del>]</del>	<u>[10</u> 9]	<del>[</del> 7 <del>]</del>	<del>[</del> 7 <del>]</del>	<u>[10</u> 9]	<del>[</del> 7 <del>]</del>	<u>[10<del>9]</del></u>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>
PCCPCH RSCP	dBm	[-6 <u>3</u> 4]	<del>[</del> -66 <del>]</del>			<del>[</del> -66 <del>]</del>	[-6 <u>3</u> 4]			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>		
Ooffoot1	dB	C1, C	2: 0; C1,	C3:0; C <sup>2</sup>	1,C4:0	C	2, C1: 0;	C2, C3:	0;	C3, C	1: 0; C3,	C2:0; C3	3,C4:0
Qoffset1 <sub>s,n</sub>	uВ	C	C1, C5:0; C1, C6:0				4:0C2, C	5:0; C2,	C6:0	(	C3, C5:0;	C3, C6:	0
Qhyst1₅	dB		0				(	)			(	)	
Treselection	S		0				(	)			(	)	
Sintrasearch	dB		not sent			not sent				not sent			
Sintersearch	dB		not sent				not sent					sent	
		Cell 4					Ce					ll 6	
Timeslot			0 DWPTS			0 DWPTS				0		PTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Cha	nnel		Channel 2					Cha	nnel	
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		[
DwPCH_Ec/lor	dB	-	-	0	0	-	-	0	0	-	-	0	0
$\hat{I}_{or}/\overline{I}_{oc}$	dB	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	[-1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>
PCCPCH RSCP	dBm	<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>		
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4	,	C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 <sub>s</sub>	dB		, ,	)	-		(		-			)	-
Treselection	S		(	)			(	)			(	)	
Sintrasearch	dB	not sent				not sent			not sent				
Sintersearch	dB		not	sent		not sent				not sent			
I <sub>oc</sub>	dBm/3, 84 MHz		-70										
Propagation Condition							AW	'GN					

	Table A.4.4A	: Cell re-selection	multi carrier	multi cell case
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# A.4.2.2.2 Test Requirements

## A.4.2.2.2.1 3.84 Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateTDD} + T_{SI}$ , where:

T\_evaluateTDDA DRX cycle length of 1280ms is assumed for this test case, this leads to a T\_evaluate TDD of 6.4s<br/>according to Table 4.1 in section 4.2.2.7.T\_SIMaximum repetition rate of relevant system info blocks that needs to be received by the UE to<br/>camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

## A.4.2.2.2.2 1.28 Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the SYNCH-UL sequence in the UpPTS for sending the RRC CONNECTION REQUEST to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateNTDD} + T_{SI}$ , where:

- $T_{evaluateNTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluate NTDD}$  of 6.4s according to Table 4.1A in section 4.2.
- T<sub>SI</sub> Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

# A.4.2.2A Scenario 2A: 3.84 Mcps TDD cell re-selection for 1.28 Mcps TDD UE

#### A.4.2.2A.1 Test Purpose and Environment

This test is to verify the requirement for the 1.28 Mcps TDD OPTION/TDD cell re-selection delay reported in section 4.2.

This scenario implies the presence of 1 low chip rate (1.28 Mcps TDD OPTION) and 1 high chip rate (TDD) cell as given in Table A.4.3B and A.4.4B.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304.

Cell 1 and cell 2 shall belong to different Location Areas.

#### Table A.4.3B: General test parameters for TDD low chip rate to TDD high chip rate cell re-selection

P	arameter	Unit	Value	Comment
Initial	Active cell		Cell1	1.28 Mcps TDD OPTION cell
condition	Neighbour cell		Cell2	TDD cell
Final condition	Active cell		Cell2	
	HCS		Not used	
UE_TXP	WR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Access Ser	vice Class (ASC#0)			Selected so that no additional
- Persistence value			1	delay is caused by the random
				access procedure. The value shall
				be used for all cells in the test.
T <sub>SI</sub>		S	1,28	The value shall be used for all cells in the test.
DRX	C cycle length	S	1,28	The value shall be used for all cells in the test.

Parameter	Unit		Ce	II 1		Cell 2				
Timeslot Number		(	0 DwPts			(	)	8	3	
		T1 T2 T1 T2				T1	T2	T 1	T 2	
UTRA RF Channel Number			Char	nnel 1			Char	inel 2		
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			
DwPCH_Ec/lor	dB			0	0	n.	a.	n.	a.	
SCH_Ec/lor	dB	n.	a.	n.	a.	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		n.a. n.a.				0	0	0	0	
PICH_Ec/lor	dB							-3	-3	
OCNS_Ec/Ior	dB	n.a. n.a.				-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	[10]	[7]			[7]	[10]	[7]	[10]	
I <sub>oc</sub>	dBm/3. 84 MHz				-	70				
PCCPCH_RSCP	dBm	[-63]	[-66]			[-66]	[-63]			
Qrxlevmin	dBm		-1	03		-103				
Qoffset1 <sub>s,n</sub>	dB		C1,	C2: 0			C2, (	C1: 0		
Qhyst1 <sub>s</sub>	dB			0			(	)		
Treselection	S			0			(	)		
Sintersearch	<u>dB</u>		not	sent			not	sent		
Propagation Condition			AM	/GN			AW	'GN		

#### Table A.4.4B: Test parameters for TDD low chip rate to TDD high chip rate cell re-selection

# A.4.2.2A.2 Test Requirements

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE: The re-selection delay equals  $T_{TDDevaluate} + T_{rep}$  repetition period of the broadcast information of the selected cell

# R4-020664

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

Γ	CR-Form-v5.1
	CHANGE REQUEST
ж	<b>25.123</b> CR <b>200 # rev</b> - <b>#</b> Current version: <b>5.0.0 #</b>
For <u>HELP</u> on u	sing this form, see bottom of this page or look at the pop-up text over the $lpha$ symbols.
Proposed change	affects: # (U)SIM ME/UE X Radio Access Network Core Network
Title: #	Correction of section 4
Source: ೫	RAN WG4
Work item code: ₩	LCRTDD-RF Date: # 17/5/2002
Category: ⊮	ARelease: %Rel-5Use one of the following categories:Use one of the following releases:F (correction)2(GSM Phase 2)A (corresponds to a correction in an earlier release)R96(Release 1996)B (addition of feature),R97(Release 1997)C (functional modification of feature)R98(Release 1998)D (editorial modification)R99(Release 1999)Detailed explanations of the above categories canREL-4(Release 4)be found in 3GPP TR 21.900.REL-5(Release 5)
Reason for change Summary of chang	
Consequences if not approved:	<ul> <li>1. The requirements shall be remained as instable in core requirements.</li> <li>2. Incomplete test cases.</li> <li><u>Isolated Impact Analysis:</u> Correction of a requirement where the specification was ambiguous or not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.</li> </ul>
Clauses affected:	¥ 4; A4
Other specs affected:	%       Other core specifications       %         Test specifications       Ø         O&M Specifications       Ø

Other comments: #

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

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

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

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

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

# 4 Idle Mode

# 4.1 Cell Selection

# 4.1.1 Introduction

After a UE has switched on and a PLMN has been selected, the Cell selection process takes place, as described in TS25.304. This process allows the UE to select a suitable cell where to camp on in order to access available services. In this process the UE can use stored information (*Stored information cell selection*) or not (*Initial cell selection*).

# 4.2 Cell Re-selection

# 4.2.1 Introduction

# 4.2.1.1 3.84 Mcps TDD option

The cell reselection procedure allows the UE to select a more suitable cell and camp on it.

When the UE is in either *Camped Normally state or Camped on Any Cell* state on a TDD cell, the UE shall attempt to identify, synchronise and monitor intra-frequency, inter-frequency and inter-RAT cells indicated in the measurement control system information of the serving cell. UE measurement activity is also controlled by measurement rules defined in TS25.304, allowing the UE to limit its measurement activity if certain conditions are fullfilled.

# 4.2.1.2 1.28 Mcps TDD option

The cell reselection procedure allows the UE to select a more suitable cell and camp on it.

When the UE is in <u>either Camped Normally state or Camped on Any Cell</u> state on a TDD cell, the UE shall attempt to <u>detect identify</u>, synchronise and monitor intra-frequency, inter-frequency and inter-RAT cells indicated in the measurement control system information of the serving cell. If the occasions/triggers occur, as specified in 25.304, the <u>UE shall perform the Cell Reselection Evaluation process.</u> UE measurement activity is also controlled by measurement rules defined in TS25.304, allowing the UE to limit its measurement activity if certain conditions are fullfilled.

# 4.2.2 Requirements

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

## 4.2.2.1.1 3.84 Mcps TDD option

The UE shall measure the PCCPCH RSCP level of the serving cell and evaluate the cell selection criterion  $S_{rxlev}$  defined in TS25.304 for the serving cell at least every DRX cycle. The UE shall filter the PCCPCH RSCP measurement of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureTDD}/2$  (see table 4.1).

If the UE has evaluated in  $N_{serv}$  successive measurements 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 the 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 TS25.304.

# 4.2.2.1.2 1.28 Mcps TDD option

The UE shall measure the PCCPCH RSCP level of the serving cell and evaluate the cell selection criterion S defined in TS25.304 for the serving cell once per at least every DRX cycle. The UE shall filter the PCCPCH RSCP level of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least  $T_{measureNTDD}/2$  (see table 4.1A).

If the UE has evaluated in  $N_{serv}$  successive measurements <u>consecutive DRX cycles</u> 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 the 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 TS25.304.

# 4.2.2.2 Measurement of intra-frequency cells

#### 4.2.2.2.1 3.84 Mcps option

The UE shall measure PCCPCH RSCP at least every  $T_{measureTDD}$  (see table 4.1) for intra-frequency cells that are identified and measured according to the measurement rules.  $T_{measureTDD}$  is defined in Table 4.1. The UE shall filter PCCPCH 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  $T_{measureTDD}/2$ .

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  $T_{evaluateTDD}$  (see table 4.1), from the moment the intra-frequency cell became at least 2 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 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.

## 4.2.2.2.2 1.28 Mcps option

The UE shall measure PCCPCH RSCP at least every  $T_{measureNTDD}$  (see table 4.1A) for intra-frequency cells that are identified and measured according to the measurement rules.  $T_{measureNTDD}$  is defined in Table 4.1A. The UE shall filter PCCPCH 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  $T_{measureNTDD}/2$ .

The filtering shall be such that the UE shall be capable of evaluating that an intra-frequency cell has become better <u>ranked</u> than the serving cell within  $T_{evaluateNTDD}$  (see table 4.1A), from the moment the intra-frequency cell became at least [2] dB better ranked than the current serving cell, provided that Treselection timer is set to zero and PCCPCH 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 Measurement of inter-frequency TDD cells

## 4.2.2.3.1 3.84 Mcps option

The UE shall measure PCCPCH RSCP at least every ( $N_{carrier}$ -1) \*  $T_{measureTDD}$  (see table 4.1) for inter-frequency cells that are identified and measured according to the measurement rules. The parameter  $N_{carrier}$  is the number of carriers used for TDD cells. The UE shall filter PCCPCH 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  $T_{measureTDD}/2$ .

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency cell has become better ranked than the serving cell within  $(N_{carrier}-1) * T_{evaluateTDD}$  from the moment the interfrequency 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 interfrequency 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 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.

# 4.2.2.3.2 1.28 Mcps option

The UE shall measure PCCPCH RSCP at least every  $(N_{carrier}-1) * T_{measureNTDD}$  (see table 4.1A) for inter-frequency cells that are identified and measured according to the measurement rules. The parameter  $N_{carrier}$  is the number of carriers used for 1.28 Mcps TDD OPTION cells. The maximum number of carriers is [3] including the carrier the UE is camped on. The UE shall filter PCCPCH 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  $T_{measureNTDD}/2$ .

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency cell has become better ranked than the serving cell within  $(N_{carrier}-1) * T_{evaluateNTDD}$  from the moment the inter-frequency cell became at least [3] dB better <u>ranked</u> 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 <u>ranked</u> 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.

# 4.2.2.3A 1.28 Mcps TDD to 3.84 Mcps TDD cell re-selection

This requirement only applies to 1.28 Mcps UEs supporting this mode.

The ranking of the low and high chip rate TDD cells shall be made according to the cell reselection criteria specified in TS25.304. The use of mapping functions is indicated in the broadcast.

The UE shall measure PCCPCH RSCP at least every  $N_{TDDcarrier} * T_{measureTDD}$  (see table 4.1A) for inter-frequency cells that are identified and measured according to the measurement rules. The parameter  $N_{carrier}$  is the number of carriers used for 3.84 Mcps TDD cells. The maximum number of carriers is 3. The UE shall filter PCCPCH RSCP measurements of each measured high chip rate 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 a high chip rate TDD cell has become better ranked than the serving cell within  $N_{TDDcarrier} * T_{evaluateTDD}$  from the moment the inter-frequency cell became at least [3] better ranked 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 Treselection timer has a non zero value and the inter-frequency 3.84Mcps TDD cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency 3.84Mcps TDD cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

# 4.2.2.4 Measurement of inter-frequency FDD cells

## 4.2.2.4.1 3.84 Mcps option

The UE shall measure the CPICH RSCP and CPICH Ec/Io of each FDD 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  $T_{measureFDD}$  (see table 4.1). The UE shall filter 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  $T_{measureFDD}/2$ ...

The filtering of CPICH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency cell has become better ranked than the serving cell within  $N_{carrierFDD} * T_{evaluateFDD}$  from the moment the interfrequency 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 than the current serving cell provided that Treselection timer is set to zero. The parameter  $N_{carrierFDD}$  is the number of carriers used for FDD cells.

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.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. If FDD cell has been ranked as the best cell and IE cell\_selection\_and\_reselection-quality\_measure is set to CPICH Ec/No, then UE shall perform a second ranking of the FDD cells using CPICH Ec/Io as the measurement quantity, before performing cell re-selection.

# 4.2.2.4.2 1.28 Mcps option

This requirement only applies to 1.28 Mcps UEs supporting this mode.

The UE shall measure the signal level-CPICH RSCP and CPICH Ec/Io of each FDD 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  $T_{measureFDD}$  (see table 4.1A). The UE shall filter CPICH RSCP measurements of each measured interfrequency cell using at least 2 measurements which are taken so that the time difference between the measurements is at least  $T_{measureFDD}/2$ . The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

CPICH RSCP is used as basic measurement quantity for cell ranking, the filtering <u>of CPICH RSCP</u> 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  $NFDD_{carrierFDD} * T_{evaluateFDD}$  from the moment the inter-frequency cell became at least [5] dB better <u>ranked</u> 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 than the current serving cell provided that Treselection timer is set to zero. The parameter  $N_{carrierFDD}$  is the number of carriers used for FDD cells.

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

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. If FDD cell has been ranked as the best cell and IE cell\_selection\_and\_reselection-quality\_measure is set to CPICH Ec/No, then UE shall perform a second ranking of the FDD cells using CPICH Ec/Io as the measurement quantity, before performing cell re-selection.

# 4.2.2.5 Measurement of inter-RAT GSM cells

## 4.2.2.5.1 3.84 Mcps option

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 cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measurements are required by the measurement rules in TS25.304, 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 re-selection criteria in TS25.304. 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 can not demodulate the BSIC of that GSM BCCH carrier.

# 4.2.2.5.2 1.28 Mcps option

The UE shall measure the signal level of <u>the GSM BCCH carrier of</u> 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 4.1A). The UE shall maintain a running average of 4 measurements for each cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measurements are required by the measurement rules in TS25.304, Tthe UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 best ranked strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell reselection criteria in TS25.304. (the best ranked according to the cell reselection criteria defined in TS25.304) at least every 30 seconds if GSM cells are measured according to the measurement rules. 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 can not demodulate the BSIC of that GSM BCCH carrier.

# 4.2.2.6 Evaluation of cell reselection criteria

#### 4.2.2.6.1 3.84 Mcps option

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 once every DRX cycle.

UE shall perform cell reselection immediately after the UE has found a better ranked suitable cell unless less than 1 second has elapsed from the moment the UE started camping on the current serving cell.

#### 4.2.2.6.2 1.28 Mcps option

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.

Cell reselection shall take place immediately after the UE has found a better <u>ranked</u> suitable cell unless the UE has made cell reselection within the last 1 second.

## 4.2.2.7 Maximum interruption time in paging reception

#### 4.2.2.7.1 3.84 Mcps option

UE shall perform the cell re-selection with minimum interruption in monitoring downlink channels for paging reception.

At intra-frequency cell re-selection, the UE shall monitor the downlink of current serving cell for paging reception until the UE is capable to start monitoring downlink channels of the target intra-frequency cell for paging reception. The interruption time shall not exceed 50 ms.

At inter-frequency and inter-RAT cell re-selection, the UE shall monitor the downlink of current serving cell for paging reception until the UE is capable to start monitoring downlink channels for paging reception of the target inter-frequency cell. For inter-frequency cell re-selection, the interruption time shall not exceed  $T_{SI}$  + 50 ms. For inter-RAT cell re-selection the interruption time shall not exceed  $T_{BCCH}$  + 50 ms.

 $T_{SI}$  is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS25.331 for a UTRAN cell.

 $T_{BCCH}$  is the maximum time allowed to read BCCH data from a GSM cell as defined in TS45.008.

These requirements assume sufficient radio conditions, so that decoding of system information can be made without errors.

DRX cycle length [s]	N <sub>serv</sub> (number of DRX cycles)	T <sub>measureTDD</sub> [s] (number of DRX cycles)	T <sub>evaluateTDD</sub> [s] (number of DRX cycles)	T <sub>measureFDD</sub> [s] (number of DRX cycles)	T <sub>evaluateFDD</sub> [s] (number of DRX cycles)	T <sub>measureGSM</sub> [s] (number of DRX cycles)
0.08	4	0.64 (8 DRX	2.56 (32 DRX	0.64 (8 DRX	2.56 (32 DRX	2.56 (32 DRX
		cycles)	cycles)	cycles)	cycles)	cycles)
0.16	4	0.64 (4)	2.56 (16)	0.64 (4)	2.56 (16)	2.56 (16)
0.32	4	1.28 (4)	5.12 (16)	1.28 (4)	5.12 (16)	5.12 (16)
0.64	4	1.28 (2)	5.12 (8)	1.28 (2)	5.12 (8)	5.12 (8)
1.28	2	1.28 (1)	6.4 (5)	1.28 (1)	6.4 (5)	6.4 (5)
2.56	2	2.56 (1)	7.68 (3)	2.56 (1)	7.68 (3)	7.68 (3)
5.12	1	5.12 (1)	10.24 (2)	5.12 (1)	10.24 (2)	10.24 (2)

Table 4.1: T<sub>measureTDD</sub>, T<sub>evaluateTDD</sub>, T<sub>measureFDD</sub>, T<sub>evaluateFDD</sub> and T<sub>measureGSM</sub>

In idle mode, UE shall support DRX cycles lengths 0.64, 1.28, 2.56 and 5.12 s, according to [16].

#### 4.2.2.7.2 1.28 Mcps option

UE shall perform the cell re-selection with minimum interruption in monitoring downlink channels for paging reception.

At intra-frequency cell re-selection, the UE shall monitor the downlink of current serving cell for paging reception until the UE is capable to start monitoring downlink channels of the target intra-frequency cell for paging reception. The interruption time shall not exceed [50] ms.

At inter-frequency and inter-RAT cell re-selection, the UE shall monitor the downlink of current serving cell for paging reception until the UE is capable to start monitoring downlink channels for paging reception of the target inter-frequency cell. For inter-frequency cell re-selection he interruption time must not exceed  $T_{SI} + [50]$  ms. For inter-Rat cell re-selection the interruption time must not exceed  $T_{BCCH}+[50]$  ms.

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

T<sub>BCCH</sub> is the maximum time allowed to read BCCH data from a GSM cell [20].

These requirements assume sufficient radio conditions, so that decoding of system information can be made without errors and does not take into account cell re-selection failure.

DRX cycle length [s]	N <sub>serv</sub> <u>{(DRX</u> <u>cycles)num</u> <del>ber of</del> <del>successive</del> <del>measureme</del> <del>nts]</del>	T <sub>measureNTDD</sub> [s] (number of DRX cycles)	T <sub>evaluateNTDD</sub> [s] (number of DRX cycles)	T <sub>measureTD</sub> <sub>D</sub> [s] (number of DRX cycles)	T <sub>evaluateTDD</sub> [s] (number of DRX cycles)	T <sub>measureFD</sub> <sub>D</sub> [S] (number of DRX cycles)	T <sub>evaluateFDD</sub> [s] (number of DRX cycles)	T <sub>measureGSM</sub> [s] (number of DRX cycles)
0.08	4	0.64 (8 DRX	2.56 (32 DRX	0.64 (8 DRX	2.56 (32 DRX	0.64 (8 DRX	2.56 (32 DRX	2.56 (32 DRX
		cycles)	cycles)	cycles)	cycles)	cycles)	cycles)	cycles)
0.16	4	0.64 (4)	2.56 (16)	0.64 (4)	2.56 (16)	0.64 (4)	2.56 (16)	2.56 (16)
0.32	4	1.28 (4)	5.12 (16)	1.28 (4)	5.12 (16)	1.28 (4)	5.12 (16)	5.12 (16)
0.64	4	1.28 (2)	5.12 (8)	1.28 (2)	5.12 (8)	1.28 (2)	5.12 (8)	5.12 (8)
1.28	2	1.28 (1)	6.4 (5)	1.28 (1)	6.4 (5)	1.28 (1)	6.4 (5)	6.4 (5)
2.56	2	2.56 (1)	7.68 (3)	2.56 (1)	7.68 (3)	2.56 (1)	7.68 (3)	7.68 (3)
5.12	1	5.12 (1)	10.24 (2)	5.12 (1)	10.24 (2)	5.12 (1)	10.24 (2)	10.24 (2)

Table 4.1A: T<sub>measureNTDD</sub>, T<sub>evaluateNTDD</sub>, T<sub>measureTDD</sub>, T<sub>evaluateTDD</sub>, T<sub>measureFDD</sub>, T<sub>evaluateFDD</sub> and T<sub>measureGSM</sub>

In idle mode, UE shall support DRX cycles lengths 0.64, 1.28, 2.56 and 5.12 s.

#### 4.2.2.8 Number of cells in cell lists

#### 4.2.2.8.1 3.84 Mcps option

For idle mode cell re-selection purposes, the UE shall be capable of monitoring:

- 32 intra-frequency cells (including serving cell), and
- 32 inter-frequency cells, including
  - TDD mode cells on maximum 2 additional TDD carriers, and
  - Depending on UE capability, FDD mode cells, distributed on up to 3 FDD carriers, and
- Depending on UE capability, 32 inter RAT GSM cells,

as indicated in cell information lists sent in system information (BCCH).

#### 4.2.2.8.2 1.28 Mcps option

The UE shall be capable of monitoring [32] intra frequency 1.28 Mcps TDD OPTION cells (including serving cell), [32] inter frequency cells including low and high chip rate TDD Mode cells and FDD Mode cells if FDD and/or high chip rate TDD is supported by the UE.

The 1.28 Mcps TDD OPTION inter frequency cells can be located on [x] additional frequencies besides the serving cell.

The inter frequency cells can be located on up to [x] carriers.

In addition the UE shall be able to monitor 32 GSM carriers if GSM is supported by the UE. UE measurement activity is controlled by measurement rules defined in in TS25.304, allowing the UE to limit its measurement activity if certain conditions are fulfilled.

For idle mode cell re-selection purposes, the UE shall be capable of monitoring:

- 32 intra-frequency cells (including serving cell), and
- 32 inter-frequency cells, including
  - TDD mode cells on maximum 3 additional TDD carriers, and
  - Depending on UE capability, FDD mode cells distributed on up to 3 FDD carriers, and
- Depending on UE capability, 32 GSM cells distributed on up to 32 GSM carriers,

as indicated in cell information lists sent in system information (BCCH).

# <Next Change>

# A.4 Idle Mode

# A.4.1 Cell selection

NOTE: This section is included for consistency with numbering with section 4; no test covering requirements exist.

# A.4.2 Cell Re-Selection

For each of the re-selection scenarios in section 4.2 a test is proposed.

For TDD/TDD cell reselection two scenarios are considered:

Scenario 1: Single carrier case

Scenario 2: Multi carrier case

# A.4.2.1 Scenario 1: TDD/TDD cell re-selection single carrier case

# A.4.2.1.1 Test Purpose and Environment

This test is to verify the requirement for the cell re-selection delay in the single carrier case reported in section 4.2.2.

## A.4.2.1.1.1 3.84 Mcps TDD option

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.4.1 and A.4.2. Cell 1 and cell 2 shall belong to different Location Areas.

Parameter		Unit	Value	Comment					
Initial	ial Active cell		Cell1						
condition	Neighbour cells		Cell2, Cell3,Cell4,						
			Cell5, Cell6						
Final condition	Final condition Active cell		Cell2						
H	HCS		Not used						
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.					
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.					
Access Service Class (ASC#0)				Selected so that no additional delay is caused by					
<ul> <li>Persistence value</li> </ul>			1	the random access procedure. The value shall be					
				used for all cells in the test.					
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test.					
DRX cycle length		S	1.28	The value shall be used for all cells in the test.					
T1		S	15						
T2		S	15						

Parameter	Unit	Cell 1				Cell 2				Cell 3				
Timeslot Number		0 8		-	0		8		0		8			
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1	
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74			
Qoffset1 <sub>s,n</sub>	dB			C3:0; C1 ; C1,C6:(		C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2,C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3,C6:0				
Qhyst 1 <sub>s</sub>	dB			0		0				0				
Treselection	S		(	)			(	)		0				
Sintrasearch	dB	not sent				not sent				not sent				
		Cell 4				Cell 5				Cell 6				
Timeslot		0 8				0 8				0 8				
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	inel 1		Channel 1				Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74			
Qoffset1 <sub>s,n</sub>	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0				
Qhyst1 <sub>s</sub>	dB	0			0				0					
Treselection	S		(	)		0				0				
Sintrasearch	dB	not sent				not sent				not sent				
I <sub>oc</sub>	dBm/3, 84 MHz	-70												
Propagation Condition		AWGN												

Table A.4.2: Cell re-selection single carrier multi-cell case

# A.4.2.1.1.2 1.28 Mcps TDD option

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.4.1A and A.4.2A. <u>The UE is requested to monitor neighbouring cells on 1 carrier. Cell 1 and cell 2 shall belong to different Location Areas.</u>

# Table A.4.1A: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment					
Initial condition Active cell			Cell1						
	Neighbour cells		Cell2, Cell3,Cell4, Cell5,						
			Cell6						
Final condition	Active cell		Cell2						
	HCS		Not used						
UE_TXPW	UE_TXPWR_MAX_RACH		21	The value shall be used for all cells in the test.					
Qrxlevmin		dBm	-103	The value shall be used for all cells in the test.					
Access Servio	Access Service Class (ASC#0)			Selected so that no additional					
Persis	Persistence value		1	delay is caused by the random					
				access procedure. The value shall					
				be used for all cells in the test.					
	T <sub>SI</sub>		1.28	The value shall be used for all cells in					
				the test.					
DRX c	DRX cycle length		1.28	The value shall be used for all cells in					
				the test.					
	T1	S	15						
	T2		15						

# Table A.4.2A: Cell re-selection single carrier multi-cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
Timeslot Number		0		DWPTS		0		DWPTS		0		DWPTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
$\hat{I}_{or}/I_{oc}$	dB	<del>[</del> 9 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>
P¢CPCH RSCP	dBm	<del>[</del> -64 <del>]</del>	[-66]			[-66]	[-64]			[-74]	[-74]		
Qoffset1 <sub>s,n</sub>	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0			C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0				
Qhyst1 <sub>s</sub>	dB		0			0				0			
Treselection	S	0				0				0			
Sintrasearch	dB	not sent			not sent				not sent				
		Cell 4				Cell 5				Cell 6			
Timeslot			)	DWPTS		0		DWPTS		0		DWPTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nel 1		Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
$\hat{I}_{or}/I_{oc}$	dB	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>
P¢CPCH RSCP	dBm	<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>		
Qoffset1 <sub>s,n</sub>	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0			C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0				
Qhyst1 <sub>s</sub>	dB	0			0				0				
Treselection	S	0				0				0			
Sintrasearch	dB	not sent				not sent not sent						sent	
I <sub>oc</sub>	dBm/1. 28 MHz	-70											
Propagation Condition		AWGN											

### A.4.2.1.2 Test Requirements

A.4.2.1.2.1 3.84 Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

#### NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateTDD} + T_{SI}$ , where:

 $T_{evaluateTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluateTDD}$  of 6.4s according to Table 4.1 in section 4.2.2.7.

T<sub>SI</sub> Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

### A.4.2.1.2.2 1.28 Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send SYNCH-UL sequence in the UpPTS for sending the RRC CONNECTION REQUEST to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateNTDD} + T_{SI}$ , where:

- $T_{evaluateNTDD}$ : A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluate NTDD}$  of 6.4s according to Table 4.1A in section 4.2.
- T<sub>SI</sub>: Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

### A.4.2.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

### A.4.2.2.1 Test Purpose and Environment

This test is to verify the requirement for the cell re-selection delay in the multi carrier case reported in section 4.2.2.

### A.4.2.2.1.1 3.84 Mcps TDD option

This scenario implies the presence of 2 carriers and 6 cells as given in Table A.4.3 and A.4.4. Cell 1 and cell 2 shall belong to different Location Areas.

### Table A.4.3: General test parameters for Cell Re-selection in Multi carrier case

Par	ameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell	1	Cell2	
I	HCS		Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
	ce Class (ASC#0) tence value		4	Selected so that no additional delay is caused by the random access procedure. The value
- Persis	lence value		I	shall be used for all cells in the test.
	T <sub>SI</sub>	S	1.28	The value shall be used for all cells in the test.
DRX c	ycle length	S	1.28	The value shall be used for all cells in the test.
	T1	S	30	
	T2	S	15	

### Table A.4.4: Cell re-selection multi carrier multi cell case

Parameter	Unit		Ce	ll 1			Ce	ll 2			Ce	II 3	
Timeslot Number		C	)	8	3	0 8		0		8	3		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Chan	inel 1			Char	nel 2			Char	nnel 1	
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76		
Qoffset1 <sub>s,n</sub>	dB			C3:0; C1 C1, C6:				C3:0; C2 C2, C6:				C2:0; C3; C3; C3; C3; C6;	
Qhyst1 <sub>s</sub>	dB		(	)			(	C			(	0	
Treselection	S		0 0					0					
Sintrasearch	dB		not sent not sent				not sent						
Sintersearch	dB		not sent not sent not sent				sent						
			Cell 4 Cell 5 Cell 6										
Timeslot		C	0 8 0 8		0 8		3						
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel			Chan	nel 1			Char	nel 2			Char	nnel 2	
Number				-				-	1			-	1
PCCPCH_Ec/lor	dB	-3	-3	0		-3	-3			-3	-3		-
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>	15	15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB	0.40	0.40	-3	-3	0.40	0.40	-3	-3	0.40	0.40	-3	-3
OCNS	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76		
Qoffset1 <sub>s,n</sub>	dB		C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0 C5, C1: 0; C5, C2:0; C5,C3:0 C6, C1: 0; C6, C2:0; C6,C3 C5, C4:0; C5, C6:0 C6, C4:0; C6, C2:0; C6,C3										
Qhyst1 <sub>s</sub>	dB												
Treselection	S	0 0 0											
Sintrasearch	dB	not sent not sent not sent											
Sintersearch	dB		not	sent			not	sent			not	sent	
I <sub>oc</sub>	dBm/3, 84 MHz		-70										
Propagation Condition							AW	/GN					

### A.4.2.2.1.2 1.28 Mcps TDD option

This scenario implies the presence of 2 carriers and 6 cells as given in Table A.4.3A and A.4.4A. <u>The UE is requested</u> to monitor neighbouring cells on 2 carriers. For this test purpose the broadcast repetition period of the target cell shall be [x] s. Cell 1 and cell 2 shall belong to different Location Areas.

### Table A.4.3A: General test parameters for Cell Re-selection in Multi carrier case

Pa	rameter	Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
	HCS		Not used	
UE_TXPW	/R_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qr	xlevmin	dBm	-103	The value shall be used for all cells in the test.
	ice Class (ASC#0) stence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T <sub>SI</sub>	S	1.28	The value shall be used for all cells in the test.
DRX o	cycle length	S	1.28	The value shall be used for all cells in the test.
	T1	S	30	
	T2	S	15	

Parameter	Unit		Ce	1			Ce	ll 2			Ce	ll 3	
Timeslot Number		C	)	DW	PTS	(	0	DW	PTS		)	DW	PTS
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel			Char	nel 1			Chan	nel 2			Char	nnel 1	
Number													
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
$\hat{I}_{or}/I_{oc}$	dB	<u>[10</u> 9]	<del>[</del> 7 <del>]</del>	<u>[10</u> 9]	<del>[</del> 7 <del>]</del>	<del>[</del> 7 <del>]</del>	<u>[10</u> 9]	<del>[</del> 7 <del>]</del>	<u>[10<del>9]</del></u>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>
PCCPCH RSCP	dBm	[-6 <u>3</u> 4]	<del>[</del> -66 <del>]</del>			<del>[</del> -66 <del>]</del>	[-6 <u>3</u> 4]			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>		
Ooffoot1	dB	C1, C	2: 0; C1,	C3:0; C <sup>2</sup>	1,C4:0	C	2, C1: 0;	C2, C3:	0;	C3, C	1: 0; C3,	C2:0; C3	3,C4:0
Qoffset1 <sub>s,n</sub>	uВ	C	C1, C5:0;	C1, C6:	0	C2,C	4:0C2, C	5:0; C2,	C6:0	(	C3, C5:0;	C3, C6:	0
Qhyst1₅	dB												
Treselection	S		0 0				0						
Sintrasearch	dB		not sent not sent				not sent						
Sintersearch	dB		not sent not sent not sent										
			Cell 4 Cell 5 Cell										
Timeslot		0	-		PTS		0		PTS	0 DWPTS			
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Cha	nnel			Chan	nel 2			Cha	nnel	
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		[
DwPCH_Ec/lor	dB	-	-	0	0	-	-	0	0	-	-	0	0
$\hat{I}_{or}/\overline{I}_{oc}$	dB	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	[-1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>
PCCPCH RSCP	dBm	<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>		
Qoffset1 <sub>s,n</sub>	dB		C4, C1: 0; C4, C2:0; C4,C3:0         C5, C1: 0; C5, C2:0; C5,C3:0         C6, C1: 0; C6, C2:0; C6,C           C4, C5:0; C4, C6:0         C5, C4:0; C5, C6:0         C6, C4:0; C6, C5:0										
Qhyst1 <sub>s</sub>	dB		0 0 0 0										
Treselection	S												
Sintrasearch	dB	not sent not sent not sent											
Sintersearch	dB		not sent not sent not sent										
I <sub>oc</sub>	dBm/3, 84 MHz		-70										
Propagation Condition			AWGN										

	Table A.4.4A	: Cell re-selection	multi carrier	multi cell case
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### A.4.2.2.2 Test Requirements

### A.4.2.2.2.1 3.84 Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateTDD} + T_{SI},$  where:

T\_evaluateTDDA DRX cycle length of 1280ms is assumed for this test case, this leads to a T\_evaluate TDD of 6.4s<br/>according to Table 4.1 in section 4.2.2.7.T\_SIMaximum repetition rate of relevant system info blocks that needs to be received by the UE to<br/>camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

### A.4.2.2.2.2 1.28 Mcps TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the SYNCH-UL sequence in the UpPTS for sending the RRC CONNECTION REQUEST to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE:

The cell re-selection delay can be expressed as:  $T_{evaluateNTDD} + T_{SI}$ , where:

- $T_{evaluateNTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluate NTDD}$  of 6.4s according to Table 4.1A in section 4.2.
- T<sub>SI</sub> Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

# A.4.2.2A Scenario 2A: 3.84 Mcps TDD cell re-selection for 1.28 Mcps TDD UE

### A.4.2.2A.1 Test Purpose and Environment

This test is to verify the requirement for the 1.28 Mcps TDD OPTION/TDD cell re-selection delay reported in section 4.2.

This scenario implies the presence of 1 low chip rate (1.28 Mcps TDD OPTION) and 1 high chip rate (TDD) cell as given in Table A.4.3B and A.4.4B.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304.

Cell 1 and cell 2 shall belong to different Location Areas.

#### Table A.4.3B: General test parameters for TDD low chip rate to TDD high chip rate cell re-selection

P	arameter	Unit	Value	Comment
Initial	Active cell		Cell1	1.28 Mcps TDD OPTION cell
condition	Neighbour cell		Cell2	TDD cell
Final condition	Active cell		Cell2	
	HCS		Not used	
UE_TXP	WR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Access Ser	vice Class (ASC#0)			Selected so that no additional
- Pers	istence value		1	delay is caused by the random
				access procedure. The value shall
				be used for all cells in the test.
	T <sub>SI</sub>	S	1,28	The value shall be used for all cells in the test.
DRX	C cycle length	S	1,28	The value shall be used for all cells in the test.

Parameter	Unit	Cell 1				Cell 2				
Timeslot Number		(	)	Dw	Pts	0		8		
		T1	T2	T 1	T 2	T1	T2	T 1	T 2	
UTRA RF Channel Number			Channel 1				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			
DwPCH_Ec/lor	dB			0	0	n.	a.	n.	a.	
SCH_Ec/lor	dB	n.	n.a. n.a.		-9	-9	-9	-9		
SCH_t <sub>offset</sub>		n.	a.	n.a.		0	0	0	0	
PICH_Ec/lor	dB							-3	-3	
OCNS_Ec/Ior	dB	n.	n.a. n.a.		-3,12	-3,12	-3,12	-3,12		
$\hat{I}_{or}/I_{oc}$	dB	[10]	[7]			[7]	[10]	[7]	[10]	
I <sub>oc</sub>	dBm/3. 84 MHz				-	70				
PCCPCH_RSCP	dBm	[-63]	[-66]			[-66]	[-63]			
Qrxlevmin	dBm		-1	03			-1	03		
Qoffset1 <sub>s,n</sub>	dB		C1,	C2: 0			C2, (	C1: 0		
Qhyst1 <sub>s</sub>	dB			0			(	)		
Treselection	S	0				(	)			
Sintersearch	<u>dB</u>	not sent				not sent				
Propagation Condition			AM	/GN			AW	'GN		

### Table A.4.4B: Test parameters for TDD low chip rate to TDD high chip rate cell re-selection

### A.4.2.2A.2 Test Requirements

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE: The re-selection delay equals  $T_{TDDevaluate} + T_{rep}$  repetition period of the broadcast information of the selected cell

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		CR-Form-v5.1						
	CHANGE REQUEST							
¥	5.123 CR 201 <b># rev</b> - <sup>#</sup> Current version	<sup>n:</sup> <b>4.4.0</b> <sup>#</sup>						
For <u><b>HELP</b></u> on using this form, see bottom of this page or look at the pop-up text over the $#$ symbols.								
Proposed change a	ects: # (U)SIM ME/UE X Radio Access Network	Core Network						
Title: #	Correction of section 5							
Source: #	RAN WG4							
Work item code: ℜ	CRTDD-RF Date: # 1	17/5/2002						
Category: अ	Seoneof the following categories:Use oneof theF(correction)2(GA(corresponds to a correction in an earlier release)R96(ReB(addition of feature),R97(ReC(functional modification of feature)R98(ReD(editorial modification)R99(Reetailed explanations of the above categories canREL-4(Re	Rel-4 e following releases: SM Phase 2) elease 1996) elease 1997) elease 1998) elease 1999) elease 4) elease 5)						
Reason for change	<ul> <li>Some descriptions are ambiguous.</li> <li>2. Minimum interruption in FACH message reception is not s</li> </ul>	specified.						
Summary of chang	<ul> <li>Correction of some descriptions.</li> <li>Introduction of Minimum interruption requirement in FACH</li> </ul>	I message reception.						
Consequences if not approved:	Ambiguous description and no minimum interruption requirer message reception. <u>Isolated Impact Analysis:</u> Correction of a requirement where was ambiguous or not sufficiently explicit. Would not affect in behaving like indicated in the CR, would affect implementation behave like indicated in the CR.	the specification mplementations						
Clauses affected:	¥ 5							
Other specs affected:	%       Other core specifications       %         X       Test specifications       34.122         O&M Specifications       0							
Other comments:	# Equivalent CRs in other Releases: CR202 cat. A to 25.123 v	/5.0.0						

### How to create CRs using this form:

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

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

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

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

## 5 UTRAN Connected Mode Mobility

This section contains the requirements on the mobility procedures in UTRAN connected mode such as handover and cell re-selection.

Requirements related to the measurements in support of the execution of the UTRAN connected mode mobility procedures are specified, currently not necessarily for all UTRAN connected mode states, in section 8.

The radio links the UE shall use are controlled by UTRAN with RRC signalling.

UE behaviour in response to UTRAN RRC messages is described in TS25.331.

The purpose of Cell reselection in CELL\_FACH, CELL\_PCH and URA\_PCH states is that the UE shall select a better cell according to the cell reselection criteria in TS 25.304. CELL\_FACH, CELL\_PCH and URA\_PCH states are described in TS 25.331.

## 5.1 TDD/TDD Handover

### 5.1.1 Introduction

The purpose of TDD/TDD handover is to change the cell of the connection between UE and UTRAN. The handover procedure is initiated from UTRAN with a RRC message that implies a handover, refer to TS25.331. The handover procedure may cause the UE to change its frequency.

For 1.28 Mcps TDD, at the beginning of the measurement process the UE shall find synchronisation to the cell to measure using the synchronisation channel (DwPCH). This is described under 'cell search' in 3GPP RAN TS25.201, TS25.221 TS25.222, TS25.223, TS25.224, TS25.225' if the monitored cell is a 1.28 Mcps TDD cell. For a TDD cell to monitor after this procedure the exact timing of the midamble of the P-CCPCH is known and the measurements can be performed. Depending on the UE implementation and if timing information about the cell to monitor is available, the UE may perform the measurements on the P-CCPCH directly without prior DwPCH synchronisation.

### 5.1.2 Requirements

### 5.1.2.1 TDD/TDD Handover delay

### 5.1.2.1.1 3.84 Mcps TDD option

Procedure delay for all procedures, that can command a handover, are specified in TS25.331 section 13.5.2.

When the UE receives a RRC message implying 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 delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.1.2.2.1.

### 5.1.2.1.2 1.28 Mcps TDD option

Procedure delay for all procedures, that can command a handover, are specified in TS25.331 section 13.5.2.

When the UE receives a RRC message that implies a 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 start transmission 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 or the SYNC-UL in case that a handover to 1.28 Mcps TDD option with SYNCH uplink exchange is recommended at the designated activation time.

where:

 $D_{handover}$  equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.1.2.2.2.

### 5.1.2.2 Interruption time

### 5.1.2.2.1 3.84 Mcps TDD option

The interruption time i.e. the time between the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH, shall be less than the value in table 5.1 for intra-frequency handover and TDD/TDD inter-frequency handover. There is different requirement on the interruption time depending on if the cell is known or not and if the SFN of the target cell has to be decoded by the UE or not.

A cell shall be regarded as known by the UE if either or both of the following conditions are true:

- it has been measured during the last 5 seconds or
- a dedicated connection existed between the UE and the cell during the last 5 seconds.

The SFN of the target cell needs not to be decoded by the UE if either or both of the following conditions are true:

- a handover with timing maintain is commanded by the UTRAN or
- the SFN of the target cell is known by the UE or

TDD/TDD handover case	Maximum delay [ms]						
	Knowr	n Cell	Unknown Cell				
	SFN not to be	SFN needs to	SFN not to be	SFN needs to			
	decoded	be decoded	decoded	be decoded			
Intra-frequency	40	70	350	400			
Inter-frequency	40	70	350	400			

### Table 5.1 TDD/TDD handover – interruption time

The interruption time includes the time that can elapse till the appearance of the channel required for the synchronisation, which can be up to one frame (10ms). And the time that can elapse till the appearance of the slot in which the new uplink DPCH shall be transmitted, which can be up to one frame (10ms).

The requirement in Table 5.1 for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

NOTE: One synchronisation attempt can consist of coherent averaging using several frames.

### 5.1.2.2.2 1.28 Mcps TDD option

The interruption time i.e. the time between the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH or the SYNC-UL in case that a handover with SYNCH uplink exchange is recommended, shall be less than the value in table 5.1A. There is different requirement on the interruption time depending on if the cell is known or not and if the SFN of the target cell has to be decoded by the UE or not.-

A cell shall be regarded as known by the UE if either or both of the following conditions are true:

- it has been measured during the last 5 seconds or
- a dedicated connection existed between the UE and the cell during the last 5 seconds.

The SFN of the target cell needs not to be decoded by the UE if either or both of the following conditions are true:

- a handover with timing maintain is commanded by the UTRAN or
- the SFN of the target cell is known by the UE.-or

cell in the handover command	Maximum delay [ms]						
message	Know	n Cell	Unknown Cell				
	SFN not to be decoded	SFN needs to be decoded	SFN not to be decoded	SFN needs to be decoded			
Intra-frequency	<del>[</del> 40 <del>]</del>	<del>[</del> 70 <del>]</del>	<del>[</del> 350 <del>]</del>	<del>[</del> 400 <del>]</del>			
Inter-frequency	<del>[</del> 40 <del>]</del>	<del>[</del> 70 <del>]</del>	<del>[</del> 350 <del>]</del>	<del>[</del> 400 <del>]</del>			

### Table 5.1A: TDD/ TDD handover – interruption time

The interruption time includes the time that can elapse till the appearance of the channel required for the synchronisation. And the time that can elapse till the appearance of the new uplink DPCH or the UpPTS in which the SYNC-UL shall be transmitted, which can be up to one frame (10ms).

The requirement in Table 5.1A for the cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

NOTE: One synchronisation attempt can consist of coherent averaging using several frames.

## 5.2 TDD/FDD Handover

### 5.2.1 Introduction

The purpose of TDD/FDD handover is to change the mode between FDD and TDD.

The handover procedure is initiated from UTRAN with a handover command message , refer to TS25.331. The handover procedure causes the UE to change its frequency.

### 5.2.2 Requirements

These requirements shall apply only to TDD/FDD UE.

The requirements do not apply if FDD macro-diversity is used.

### 5.2.2.1 Handover delay

### 5.2.2.1.1 3.84 Mcps TDD option

Procedure delay for all procedures, that can command a hard handover, are specified in TS25.331 section 13.5.2.

When the UE receives a RRC message implying hard 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 DPCCH 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 DPCCH at the designated activation time.

where:

 $D_{handover}$  equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.2.2.2.

### 5.2.2.1.2 1.28 Mcps TDD option

When the UE receives a RRC message that implies a 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 DPCCH 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 DPCCH at the designated activation time.

where:

 $D_{handover}$  equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.2.2.2.2.

### 5.2.2.2 Interruption time

### 5.2.2.2.1 3.84 Mcps TDD option

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DTCH and the time the UE starts transmission of the new uplink DPCCH. The interruption time shall be less than the value in table 5.2.

There is different requirement on the interruption time depending on if the cell is known or not and if the SFN of the target cell needs to be decoded by the UE during the interruption time or not..

The definition of known cell can be found in section 5.1.2.2.

cell present in the handover command message	Maximum delay [ms]					
	Known Cell Unknown ce					
	SFN not to be SFN needs to decoded be decoded		SFN needs to be decoded			
1	[100]	[130]	[400]			

Table 5.2 TDD/FDD interruption time

The interruption time includes the interruption uncertainty when changing the timing from the old TDD to the new FDD cell, which can be up to one frame (10ms) and the time required for measuring the downlink DPCCH channel as stated in TS 25.214 section 4.3.1.2.

The requirement in Table 5.2 for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

### 5.2.2.2.2 1.28 Mcps TDD option

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCCH, shall be less than the value in table 5.2A

There is different requirement on the interruption time depending on if the cell is known or not and if the SFN of the target cell needs to be decoded by the UE during the interruption time or not.

The definition of known cell can be found in section 5.1.2.2.2.

cell in the handover command	Maximum update delay [ms]					
message	Knov	wn Cell	Unknown Cell			
	SFN not to be decoded	SFN needs to be decoded	SFN needs to be decoded			
1	<del>[</del> 100 <del>]</del>	<del>[</del> 130 <del>]</del>	<del>[</del> 400 <del>]</del>			

#### Table 5.2A: 1.28 Mcps TDD/FDD interruption time

The interruption time includes the interruption uncertainty when changing the timing from the old 1.28 Mcps TDD OPTION to the new FDD cell, which can be up to one frame (10ms) and the time required for measuring the downlink DPCCH channel as stated in TS 25.214 section 4.3.1.2.

The requirement in Table 5.2A for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

## 5.3 TDD/GSM Handover

## 5.3.1 Introduction

The purpose of inter-RAT handover from UTRAN TDD to GSM is to transfer a connection between the UE and UTRAN TDD to GSM. The handover procedure is initiated from UTRAN with a RRC message (HANDOVER FROM UTRAN COMMAND). The procedure is described in TS25.331 section 8.3.7.

## 5.3.2 Requirements

These requirements shall apply only to TDD/GSM UE.

This clause presents some of the important aspects of GSM handover required to be performed by the UE.

The underlying requirement is to ensure continuity of service to the UMTS user. The handover requirements for 3G to GSM should be comparable to GSM to GSM handover requirements.

### 5.3.2.1 Handover delay

### 5.3.2.1.1 3.84 Mcps TDD option

When the UE receives a RRC HANDOVER FROM UTRAN COMMAND with the activation time "now" or earlier than the value in Table 5.3 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in TS 45.010) on the new channel of the new RAT within the value in Table 5.3 from the last TTI containing the RRC command. If the access is delayed to an indicated activation time later than the value in Table 5.3 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in TS 45.010) on the new RAT within the value in Table 5.3 from the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in TS 45.010) on the channel of the new RAT at the designated activation time.

The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms. If the activation time is used, it corresponds to the CFN of the UTRAN channel.

UE synchronisation status	handover delay [ms]
The UE has synchronised to the GSM cell before the	90
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	190
the HANDOVER FROM UTRAN COMMAND is received	

### Table 5.3: TDD/GSM handover -handover delay

### 5.3.2.1.2 1.28 Mcps TDD option

When the UE receives a RRC HANDOVER <u>FROM UTRAN</u> COMMAND with the activation time "now" or earlier than the value in Table 5.3A from the end of the last TTI containing the RRC command, the UEit shall be ready to transmit (as specified in GSM 45.010) on the new channel within the new RAT within the value in Table 5.3A from the last TTI containing the RRC command.<sub>3</sub>

If the access is delayed to an indicated activation time later than the value in Table 5.3A from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM 45.010) on the channel of the new RAT at the designated activation time.

The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms. If the activation time is used, it corresponds to the CFN of the UTRAN channel.

UE synchronisation status	handover delay [ms]
The UE has synchronised to the GSM cell before the	90
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	190
the HANDOVER FROM UTRAN COMMAND is received	

### Table 5.3.A: 1.28 Mcps TDD/GSM handover -handover delay

### 5.3.2.2 Interruption time

### 5.3.2.2.1 3.84 Mcps TDD option

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old channel and the time the UE is ready to transmit on the new channel, shall be less than the value in Table 5.4. The requirement in Table 5.4 for the case, that UE is not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received, is valid when the signal quality of the GSM cell is good enough for successful synchronisation with one attempt.

#### Table 5.4: TDD/GSM handover - interruption time

Synchronisation status	Interruption time [ms]
The UE has synchronised to the GSM cell before the	40
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	140
the HANDOVER FROM UTRAN COMMAND is received	

### 5.3.2.2.2 1.28 Mcps TDD option

The interruption time, i.e. the time between the end of last TTI containing a transport block on the old channel and the time the UE is ready to transmit on the new channel, shall be less than the value in Table 5.4A. The requirement in Table 5.4A for the case, that UE is not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received, is valid when the signal quality of the GSM cell is good enough for successful synchronisation with one attempt.

### Table 5.4A: TDD/GSM handover - interruption time

Synchronisation status	Interruption time [ms]
The UE has synchronised to the GSM cell before the	40
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	140
the HANDOVER FROM UTRAN COMMAND is received	

## 5.4 Cell Re-selection in Cell\_FACH

### 5.4.1 Introduction

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

## 5.4.2 Requirements for 3.84Mcps TDD option

The cell re-selection delays specified below are applicable when the RRC parameter  $T_{reselection}$  is set to 0. Otherwise the Cell reselection delay is increase by  $T_{reselection}$  s.

P-CCPCH RSCP shall be used for cell reselection in Cell-FACH state to another TDD cell, CPICH RSCP shall be used for re-selection to a FDD cell and GSM carrier RSSI shall be used for cell re-selection to a GSM cell. The accuracies of

the measurements used for a cell-reselection in an AWGN environment shall comply with the requirements in chapter 9.

### 5.4.2.1 Measurements

The UE measurement capability according to section 8.4.2.1 shall apply.

### 5.4.2.2 Cell re-selection delay

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

#### 5.4.2.2.1 Intra-frequency cell re-selection

The cell re-selection delay in CELL\_FACH state for intra frequency cells shall be less than:

$$T_{reselection, intra} = T_{identify, intra} + T_{SI}$$

where

 $T_{identify_{intra}} = Specified in 8.4.2.2.1.$ 

 $T_{SI}$  =Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell.

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

### 5.4.2.2.2 Inter-frequency TDD cell re-selection

The cell re-selection delay in CELL\_FACH state for inter-frequency TDD cells shall be less than:

$$T_{\text{reselection, TDD, inter}} = T_{\text{identify, inter}} + T_{\text{SI}}$$

where

 $T_{identify_inter}$  =Specified in 8.4.2.3.1.

 $T_{SI}$  =Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell.

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

### 5.4.2.2.3 Inter-frequency FDD cell re-selection

The cell re-selection delay in CELL\_FACH state for inter-frequency FDD cells shall be less than:

 $T_{\text{reselection, FDD}} = T_{\text{identify, FDD}} + T_{\text{SI}}$ 

where

T<sub>identify, FDD</sub> =Specified in 8.4.2.4.1

 $T_{SI}$  =Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell.

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

### 5.4.2.2.4 Inter-RAT cell re-selection

The cell re-selection delay in CELL\_FACH state for inter-RAT cells shall be less than:

$$T_{reselection, GSM} = T_{identify, GSM} + T_{Measurement_GSM} + T_{SI}$$

where

 $T_{identify, GSM}$  = Is the worst case time for identification of one previously not identified GSM cell and is specified in TS25.225 Annex A.

 $T_{\text{Measurement,GSM}}$  = is the worst case time for measuring one previously identified GSM carrier

T<sub>SI</sub> =Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell.

$$T_{\text{Measurement, GSM}} = Max \left\{ 480ms, \ 8 \cdot \frac{N_{carriers}}{N_{GSM \ carrier RSSI}} \cdot T_{meas} \right\}$$

where

N<sub>carriers</sub> is the number of GSM carriers in the Inter-RAT cell info list

 $N_{GSM \ carrier \ RSSI}$  can be derived from the values in table 8.7 section 8.4.2.5.1.

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

### 5.4.2.3 Maximum interruption in FACH message reception

The UE shall perform the cell re-selection with minimum interruption in FACH message reception.

The UE shall not interrupt the FACH message reception during measurements required for cell re-selection. The UE shall not interrupt the FACH message reception during the evaluation process of a cell required for a cell re-selection.

In case the UE reselects a cell the interruption time shall not exceed  $T_{SI}$ +50ms.  $T_{SI}$  is the longest repetition period for the system information to be read by the UE to camp on the cell.

## 5.4.3 Requirements for 1.28Mcps TDD option

<u>The cell re-selection delays specified below are applicable when the RRC parameter  $T_{reselection}$  is set to 0. Otherwise the Cell reselection delay is increased by  $T_{reselection}$  s.</u>

P-CCPCH RSCP shall be used for cell reselection in Cell-FACH state to another TDD cell, CPICH RSCP and if requested in addition CPICH Ec/Io shall be used for re-selection to a FDD cell and GSM carrier RSSI shall be used for cell re-selection to a GSM cell. The accuracies of the measurements used for a cell-reselection in an AWGN environment shall comply with the requirements in chapter 9.

### 5.4.3.1 Measurements

The UE measurement capability according to section 8.4A shall apply.

### 5.4.3.2 Cell re-selection delay

For <u>cell re-selection to</u> TDD, the cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts to send SYNCH-UL sequence for sending the RRC CELL UPDATE message to the UTRAN.

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

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

### 5.4.3.2.1 Intra-frequency cell re-selection

The cell re-selection delay in CELL\_FACH state for intra frequency cells shall be less than:

$$T_{\text{reselection, intra}} = T_{\text{identify intra}} + 40ms + T_{\text{SI}} + T_{\text{RA}}$$

If a cell has been detectable at least for  $T_{identify,intra}$ , the cell re-selection delay in CELL\_FACH state for intra frequency cells shall be less than:

$$T_{reselection, intra} = T_{Measurement Period Intra} + 40ms + T_{SI} + T_{RA}$$

where

$$T_{identify intra} = Specified in 8.4A.2.2.1$$

$$T_{Measurement Period Intra} = Specified in 8.4A.2.2.2$$

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

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

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

### 5.4.23.32.2 Inter-frequency TDD cell re-selection

The cell re-selection delay in CELL\_FACH state for inter-frequency TDD cells shall be less than:

$$T_{\text{reselection, TDD, inter}} = T_{\text{identify inter}} + 40ms + T_{\text{SI}} + T_{\text{RA}}$$

If a cell has been detectable at least for  $T_{identify,inter}$ , the cell re-selection delay in CELL\_FACH state for inter frequency cells shall be less than:

$$T_{\text{reselection, TDD, inter}} = T_{\text{measurement inter}} + 40ms + T_{\text{SI}} + T_{\text{RA}}$$

where

- $T_{identify\_inter} = Specified in 8.4A.2.3.1$   $T_{measurement inter} = Specified in 8.4A.2.3.2$   $T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell.$
- $T_{RA}$  = The additional delay caused by the random access procedure.

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

5.4.23.32.3 Inter-frequency FDD cell re-selection

The cell re-selection delay in CELL\_FACH state for inter-frequency FDD cells shall be less than:

 $-\underline{T}_{\text{reselection, FDD}} = \underline{T}_{\text{identify FDD inter}} + \underline{T}_{\text{SI}} + \underline{T}_{\text{RA}}$ 

$$T_{\text{reselection, FDD}} = T_{\text{identify FDD inter}} + 100ms + T_{\text{SI}} + T_{\text{RA}}$$

where

$$T_{identify FDD inter} = Specified in 8.4A.2.4.1$$

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

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

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

#### 5.4.23.32.4 Inter-RAT cell re-selection

The cell re-selection delay in CELL\_FACH state for inter-RAT cells shall be less than:

$$T_{reselection, GSM} = T_{identify GSM} + T_{Measurement GSM} + T_{BCCH} + T_{RA}$$

where

T<sub>identify GSM</sub>

= Is the worst case time for identification of one previously not identified GSM cell and is specified in TS25.225 Annex A.

 $T_{\text{Measurement GSM}}$  is the worst case time for measuring one previously identified GSM carrier.

$$T_{\text{Measurement GSM}} = Max \left\{ [480]ms, 8 \cdot \frac{N_{carriers}}{N_{GSM \ carrier \ RSSI}} \cdot T_{meas} \right\}$$

where

NT

N <sub>carriers</sub>	is the number of GSM carriers in the Inter-RAT cell into list
$N_{GSM\ carrier\ RSSI}$	can be derived from the values in table 8.7 section 8.4A.2.5.1.
T <sub>RA</sub>	= The additional delay caused by the random access procedure.
m	

 $T_{BCCH}$  = the maximum time allowed to read BCCH data from GSM cell [TS 45.008].

is the month on of COM consists in the Inter DAT call info list

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

### 5.4.3.3 Interruption time

The interruption time, i. e. the time between the last TTI the UE monitors the FACH channel on the serving cell and the time the UE starts to transmit in the target cell.

The UE shall perform the cell re-selection with minimum interruption time.

In case the UE reselects a UTRAN cell the interruption time shall not exceed  $T_{RA}+T_{SI}+50$ ms.

In case the UE reselects a GSM cell the interruption time shall not exceed  $T_{RA}+T_{BCCH}+50$ ms.

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

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

<u> $T_{BCCH}$ </u> = the maximum time allowed to read BCCH data from GSM cell [TS 45.008].

R4-020666

## 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

											CR-Form-v5.1
	CHANGE REQUEST										
¥	<mark>25.123</mark>	CR	202	Ħ	rev	-	ж	Current vers	sion:	5.0.0	ж
For <u><b>HELP</b></u> on using this form, see bottom of this page or look at the pop-up text over the $#$ symbols.											
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network											
Title: ដ	Correctio	on of se	ction 5								
Source: ೫	RAN WO	64									
Work item code: 🕷	LCRTDE	D-RF						Date: #	17/	5/2002	
Category:       %       A       Release: %       Rel-5         Use one of the following categories:       Use one of the following releases:       2       (GSM Phase 2)         A       (corresponds to a correction in an earlier release)       R96       (Release 1996)         B       (addition of feature),       R97       (Release 1997)         C       (functional modification of feature)       R98       (Release 1998)         D       (editorial modification)       R99       (Release 1999)         Detailed explanations of the above categories can be found in 3GPP TR 21.900.       REL-5       (Release 5)					) ) )						
Reason for change:			escription n interrup				ige re	eception is n	ot spe	ecified.	
Summary of change	Summary of change: # 1. Correction of some descriptions. 2. Introduction of Minimum interruption requirement in FACH message reception.						reception.				
Consequences if not approved:	mes <u>Isol</u> was beh	sage re ated Im ambig aving li	eception. pact Ana uous or r	ilysis: Co ot suffic ted in th	orrection ciently e CR,	on of a explici	a req it. W	uirement whould not affe	ere th ct imp	e specific	cation ions
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### How to create CRs using this form:

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

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

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

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

## 5 UTRAN Connected Mode Mobility

This section contains the requirements on the mobility procedures in UTRAN connected mode such as handover and cell re-selection.

Requirements related to the measurements in support of the execution of the UTRAN connected mode mobility procedures are specified, currently not necessarily for all UTRAN connected mode states, in section 8.

The radio links the UE shall use are controlled by UTRAN with RRC signalling.

UE behaviour in response to UTRAN RRC messages is described in TS25.331.

The purpose of Cell reselection in CELL\_FACH, CELL\_PCH and URA\_PCH states is that the UE shall select a better cell according to the cell reselection criteria in TS 25.304. CELL\_FACH, CELL\_PCH and URA\_PCH states are described in TS 25.331.

## 5.1 TDD/TDD Handover

### 5.1.1 Introduction

The purpose of TDD/TDD handover is to change the cell of the connection between UE and UTRAN. The handover procedure is initiated from UTRAN with a RRC message that implies a handover, refer to TS25.331. The handover procedure may cause the UE to change its frequency.

For 1.28 Mcps TDD, at the beginning of the measurement process the UE shall find synchronisation to the cell to measure using the synchronisation channel (DwPCH). This is described under 'cell search' in 3GPP RAN TS25.201, TS25.221 TS25.222, TS25.223, TS25.224, TS25.225' if the monitored cell is a 1.28 Mcps TDD cell. For a TDD cell to monitor after this procedure the exact timing of the midamble of the P-CCPCH is known and the measurements can be performed. Depending on the UE implementation and if timing information about the cell to monitor is available, the UE may perform the measurements on the P-CCPCH directly without prior DwPCH synchronisation.

## 5.1.2 Requirements

### 5.1.2.1 TDD/TDD Handover delay

### 5.1.2.1.1 3.84 Mcps TDD option

Procedure delay for all procedures, that can command a handover, are specified in TS25.331 section 13.5.2.

When the UE receives a RRC message implying 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 delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.1.2.2.1.

### 5.1.2.1.2 1.28 Mcps TDD option

Procedure delay for all procedures, that can command a handover, are specified in TS25.331 section 13.5.2.

When the UE receives a RRC message that implies a 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 start transmission 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 or the SYNC-UL in case that a handover to 1.28 Mcps TDD option with SYNCH uplink exchange is recommended at the designated activation time.

where:

 $D_{handover}$  equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.1.2.2.2.

### 5.1.2.2 Interruption time

### 5.1.2.2.1 3.84 Mcps TDD option

The interruption time i.e. the time between the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH, shall be less than the value in table 5.1 for intra-frequency handover and TDD/TDD inter-frequency handover. There is different requirement on the interruption time depending on if the cell is known or not and if the SFN of the target cell has to be decoded by the UE or not.

A cell shall be regarded as known by the UE if either or both of the following conditions are true:

- it has been measured during the last 5 seconds or
- a dedicated connection existed between the UE and the cell during the last 5 seconds.

The SFN of the target cell needs not to be decoded by the UE if either or both of the following conditions are true:

- a handover with timing maintain is commanded by the UTRAN or
- the SFN of the target cell is known by the UE or

TDD/TDD handover case	Maximum delay [ms]					
	Knowr	vn Cell				
	SFN not to be	SFN needs to	SFN not to be	SFN needs to		
	decoded	be decoded	decoded	be decoded		
Intra-frequency	40	70	350	400		
Inter-frequency	40	70	350	400		

### Table 5.1 TDD/TDD handover – interruption time

The interruption time includes the time that can elapse till the appearance of the channel required for the synchronisation, which can be up to one frame (10ms). And the time that can elapse till the appearance of the slot in which the new uplink DPCH shall be transmitted, which can be up to one frame (10ms).

The requirement in Table 5.1 for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

NOTE: One synchronisation attempt can consist of coherent averaging using several frames.

### 5.1.2.2.2 1.28 Mcps TDD option

The interruption time i.e. the time between the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH or the SYNC-UL in case that a handover with SYNCH uplink exchange is recommended, shall be less than the value in table 5.1A. There is different requirement on the interruption time depending on if the cell is known or not and if the SFN of the target cell has to be decoded by the UE or not.-

A cell shall be regarded as known by the UE if either or both of the following conditions are true:

- it has been measured during the last 5 seconds or
- a dedicated connection existed between the UE and the cell during the last 5 seconds.

The SFN of the target cell needs not to be decoded by the UE if either or both of the following conditions are true:

- a handover with timing maintain is commanded by the UTRAN or
- the SFN of the target cell is known by the UE.-or

cell in the handover command	Maximum delay [ms]				
message	Know	n Cell	Unknov	Unknown Cell	
	SFN not to be decoded	SFN needs to be decoded	SFN not to be decoded	SFN needs to be decoded	
Intra-frequency	<del>[</del> 40 <del>]</del>	<del>[</del> 70 <del>]</del>	<del>[</del> 350 <del>]</del>	<del>[</del> 400 <del>]</del>	
Inter-frequency	<del>[</del> 40 <del>]</del>	<del>[</del> 70 <del>]</del>	<del>[</del> 350 <del>]</del>	<del>[</del> 400 <del>]</del>	

### Table 5.1A: TDD/ TDD handover – interruption time

The interruption time includes the time that can elapse till the appearance of the channel required for the synchronisation. And the time that can elapse till the appearance of the new uplink DPCH or the UpPTS in which the SYNC-UL shall be transmitted, which can be up to one frame (10ms).

The requirement in Table 5.1A for the cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

NOTE: One synchronisation attempt can consist of coherent averaging using several frames.

## 5.2 TDD/FDD Handover

### 5.2.1 Introduction

The purpose of TDD/FDD handover is to change the mode between FDD and TDD.

The handover procedure is initiated from UTRAN with a handover command message , refer to TS25.331. The handover procedure causes the UE to change its frequency.

### 5.2.2 Requirements

These requirements shall apply only to TDD/FDD UE.

The requirements do not apply if FDD macro-diversity is used.

### 5.2.2.1 Handover delay

### 5.2.2.1.1 3.84 Mcps TDD option

Procedure delay for all procedures, that can command a hard handover, are specified in TS25.331 section 13.5.2.

When the UE receives a RRC message implying hard 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 DPCCH 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 DPCCH at the designated activation time.

where:

 $D_{handover}$  equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.2.2.2.

### 5.2.2.1.2 1.28 Mcps TDD option

When the UE receives a RRC message that implies a 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 DPCCH 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 DPCCH at the designated activation time.

where:

 $D_{handover}$  equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.2.2.2.2.

### 5.2.2.2 Interruption time

### 5.2.2.2.1 3.84 Mcps TDD option

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DTCH and the time the UE starts transmission of the new uplink DPCCH. The interruption time shall be less than the value in table 5.2.

There is different requirement on the interruption time depending on if the cell is known or not and if the SFN of the target cell needs to be decoded by the UE during the interruption time or not..

The definition of known cell can be found in section 5.1.2.2.

cell present in the handover command message	Maximum delay [ms]			
	Known Cell Unknown cel			
	SFN not to be decoded	SFN needs to be decoded	SFN needs to be decoded	
1	[100]	[130]	[400]	

Table 5.2 TDD/FDD interruption time

The interruption time includes the interruption uncertainty when changing the timing from the old TDD to the new FDD cell, which can be up to one frame (10ms) and the time required for measuring the downlink DPCCH channel as stated in TS 25.214 section 4.3.1.2.

The requirement in Table 5.2 for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

### 5.2.2.2.2 1.28 Mcps TDD option

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCCH, shall be less than the value in table 5.2A

There is different requirement on the interruption time depending on if the cell is known or not and if the SFN of the target cell needs to be decoded by the UE during the interruption time or not.

The definition of known cell can be found in section 5.1.2.2.2.

cell in the handover command	Maximum update delay [ms]			
message	Knov	wn Cell	Unknown Cell	
	SFN not to be decoded	SFN needs to be decoded	SFN needs to be decoded	
1	<del>[</del> 100 <del>]</del>	<del>[</del> 130 <del>]</del>	<del>[</del> 400 <del>]</del>	

#### Table 5.2A: 1.28 Mcps TDD/FDD interruption time

The interruption time includes the interruption uncertainty when changing the timing from the old 1.28 Mcps TDD OPTION to the new FDD cell, which can be up to one frame (10ms) and the time required for measuring the downlink DPCCH channel as stated in TS 25.214 section 4.3.1.2.

The requirement in Table 5.2A for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

## 5.3 TDD/GSM Handover

### 5.3.1 Introduction

The purpose of inter-RAT handover from UTRAN TDD to GSM is to transfer a connection between the UE and UTRAN TDD to GSM. The handover procedure is initiated from UTRAN with a RRC message (HANDOVER FROM UTRAN COMMAND). The procedure is described in TS25.331 section 8.3.7.

## 5.3.2 Requirements

These requirements shall apply only to TDD/GSM UE.

This clause presents some of the important aspects of GSM handover required to be performed by the UE.

The underlying requirement is to ensure continuity of service to the UMTS user. The handover requirements for 3G to GSM should be comparable to GSM to GSM handover requirements.

### 5.3.2.1 Handover delay

### 5.3.2.1.1 3.84 Mcps TDD option

When the UE receives a RRC HANDOVER FROM UTRAN COMMAND with the activation time "now" or earlier than the value in Table 5.3 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in TS 45.010) on the new channel of the new RAT within the value in Table 5.3 from the last TTI containing the RRC command. If the access is delayed to an indicated activation time later than the value in Table 5.3 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in TS 45.010) on the new RAT at the designated activation time.

The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms. If the activation time is used, it corresponds to the CFN of the UTRAN channel.

UE synchronisation status	handover delay [ms]
The UE has synchronised to the GSM cell before the	90
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	190
the HANDOVER FROM UTRAN COMMAND is received	

### Table 5.3: TDD/GSM handover -handover delay

### 5.3.2.1.2 1.28 Mcps TDD option

When the UE receives a RRC HANDOVER <u>FROM UTRAN</u> COMMAND with the activation time "now" or earlier than the value in Table 5.3A from the end of the last TTI containing the RRC command, the UEit shall be ready to transmit (as specified in GSM 45.010) on the new channel within the new RAT within the value in Table 5.3A from the last TTI containing the RRC command.<sub>5</sub>

If the access is delayed to an indicated activation time later than the value in Table 5.3A from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM 45.010) on the channel of the new RAT at the designated activation time.

The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms. If the activation time is used, it corresponds to the CFN of the UTRAN channel.

UE synchronisation status	handover delay [ms]
The UE has synchronised to the GSM cell before the	90
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	190
the HANDOVER FROM UTRAN COMMAND is received	

### Table 5.3.A: 1.28 Mcps TDD/GSM handover -handover delay

### 5.3.2.2 Interruption time

### 5.3.2.2.1 3.84 Mcps TDD option

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old channel and the time the UE is ready to transmit on the new channel, shall be less than the value in Table 5.4. The requirement in Table 5.4 for the case, that UE is not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received, is valid when the signal quality of the GSM cell is good enough for successful synchronisation with one attempt.

#### Table 5.4: TDD/GSM handover - interruption time

Synchronisation status	Interruption time [ms]
The UE has synchronised to the GSM cell before the	40
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	140
the HANDOVER FROM UTRAN COMMAND is received	

### 5.3.2.2.2 1.28 Mcps TDD option

The interruption time, i.e. the time between the end of last TTI containing a transport block on the old channel and the time the UE is ready to transmit on the new channel, shall be less than the value in Table 5.4A. The requirement in Table 5.4A for the case, that UE is not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received, is valid when the signal quality of the GSM cell is good enough for successful synchronisation with one attempt.

### Table 5.4A: TDD/GSM handover - interruption time

Synchronisation status	Interruption time [ms]
The UE has synchronised to the GSM cell before the	40
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	140
the HANDOVER FROM UTRAN COMMAND is received	

## 5.4 Cell Re-selection in Cell\_FACH

### 5.4.1 Introduction

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

## 5.4.2 Requirements for 3.84Mcps TDD option

The cell re-selection delays specified below are applicable when the RRC parameter  $T_{reselection}$  is set to 0. Otherwise the Cell reselection delay is increase by  $T_{reselection}$  s.

P-CCPCH RSCP shall be used for cell reselection in Cell-FACH state to another TDD cell, CPICH RSCP shall be used for re-selection to a FDD cell and GSM carrier RSSI shall be used for cell re-selection to a GSM cell. The accuracies of

the measurements used for a cell-reselection in an AWGN environment shall comply with the requirements in chapter 9.

### 5.4.2.1 Measurements

The UE measurement capability according to section 8.4.2.1 shall apply.

### 5.4.2.2 Cell re-selection delay

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

#### 5.4.2.2.1 Intra-frequency cell re-selection

The cell re-selection delay in CELL\_FACH state for intra frequency cells shall be less than:

$$T_{reselection, intra} = T_{identify, intra} + T_{SI}$$

where

 $T_{identify_{intra}} = Specified in 8.4.2.2.1.$ 

 $T_{SI}$  =Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell.

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

### 5.4.2.2.2 Inter-frequency TDD cell re-selection

The cell re-selection delay in CELL\_FACH state for inter-frequency TDD cells shall be less than:

$$T_{\text{reselection, TDD, inter}} = T_{\text{identify, inter}} + T_{\text{SI}}$$

where

 $T_{identify_inter}$  =Specified in 8.4.2.3.1.

 $T_{SI}$  =Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell.

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

### 5.4.2.2.3 Inter-frequency FDD cell re-selection

The cell re-selection delay in CELL\_FACH state for inter-frequency FDD cells shall be less than:

 $T_{\text{reselection, FDD}} = T_{\text{identify, FDD}} + T_{\text{SI}}$ 

where

T<sub>identify, FDD</sub> =Specified in 8.4.2.4.1

 $T_{SI}$  =Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell.

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

### 5.4.2.2.4 Inter-RAT cell re-selection

The cell re-selection delay in CELL\_FACH state for inter-RAT cells shall be less than:

$$T_{reselection, GSM} = T_{identify, GSM} + T_{Measurement_GSM} + T_{SI}$$

where

 $T_{identify, GSM}$  = Is the worst case time for identification of one previously not identified GSM cell and is specified in TS25.225 Annex A.

 $T_{\text{Measurement,GSM}}$  = is the worst case time for measuring one previously identified GSM carrier

T<sub>SI</sub> =Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell.

$$T_{\text{Measurement, GSM}} = Max \left\{ 480ms, \ 8 \cdot \frac{N_{carriers}}{N_{GSM \ carrier RSSI}} \cdot T_{meas} \right\}$$

where

N<sub>carriers</sub> is the number of GSM carriers in the Inter-RAT cell info list

 $N_{GSM \ carrier \ RSSI}$  can be derived from the values in table 8.7 section 8.4.2.5.1.

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

### 5.4.2.3 Maximum interruption in FACH message reception

The UE shall perform the cell re-selection with minimum interruption in FACH message reception.

The UE shall not interrupt the FACH message reception during measurements required for cell re-selection. The UE shall not interrupt the FACH message reception during the evaluation process of a cell required for a cell re-selection.

In case the UE reselects a cell the interruption time shall not exceed  $T_{SI}$ +50ms.  $T_{SI}$  is the longest repetition period for the system information to be read by the UE to camp on the cell.

## 5.4.3 Requirements for 1.28Mcps TDD option

<u>The cell re-selection delays specified below are applicable when the RRC parameter  $T_{reselection}$  is set to 0. Otherwise the Cell reselection delay is increased by  $T_{reselection}$  s.</u>

P-CCPCH RSCP shall be used for cell reselection in Cell-FACH state to another TDD cell, CPICH RSCP and if requested in addition CPICH Ec/Io shall be used for re-selection to a FDD cell and GSM carrier RSSI shall be used for cell re-selection to a GSM cell. The accuracies of the measurements used for a cell-reselection in an AWGN environment shall comply with the requirements in chapter 9.

### 5.4.3.1 Measurements

The UE measurement capability according to section 8.4A shall apply.

### 5.4.3.2 Cell re-selection delay

For <u>cell re-selection to</u> TDD, the cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts to send SYNCH-UL sequence for sending the RRC CELL UPDATE message to the UTRAN.

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

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

### 5.4.3.2.1 Intra-frequency cell re-selection

The cell re-selection delay in CELL\_FACH state for intra frequency cells shall be less than:

$$T_{\text{reselection, intra}} = T_{\text{identify intra}} + 40ms + T_{\text{SI}} + T_{\text{RA}}$$

If a cell has been detectable at least for  $T_{identify,intra}$ , the cell re-selection delay in CELL\_FACH state for intra frequency cells shall be less than:

$$T_{reselection, intra} = T_{Measurement Period Intra} + 40ms + T_{SI} + T_{RA}$$

where

$$\begin{aligned} &\Gamma_{identify intra} &= \text{Specified in 8.4A.2.2.1} \\ &\Gamma_{Measurement Period Intra} &= \text{Specified in 8.4A.2.2.2} \\ &\Gamma_{SI} &= \text{The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell.} \\ &\Gamma_{RA} &= \text{The additional delay caused by the random access procedure.} \end{aligned}$$

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

### 5.4.23.32.2 Inter-frequency TDD cell re-selection

The cell re-selection delay in CELL\_FACH state for inter-frequency TDD cells shall be less than:

$$T_{\text{reselection, TDD, inter}} = T_{\text{identify inter}} + 40ms + T_{\text{SI}} + T_{\text{RA}}$$

If a cell has been detectable at least for  $T_{identify,inter}$ , the cell re-selection delay in CELL\_FACH state for inter frequency cells shall be less than:

$$T_{\text{reselection, TDD, inter}} = T_{\text{measurement inter}} + 40ms + T_{\text{SI}} + T_{\text{RA}}$$

where

- T<sub>identify\_inter</sub>
   = Specified in 8.4A.2.3.1

   T<sub>measurement inter</sub>
   = Specified in 8.4A.2.3.2

   T<sub>SI</sub>
   =The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell.
- $T_{RA}$  = The additional delay caused by the random access procedure.

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

5.4.23.32.3 Inter-frequency FDD cell re-selection

The cell re-selection delay in CELL\_FACH state for inter-frequency FDD cells shall be less than:

 $-\underline{T_{\text{reselection, FDD}}} = \underline{T_{\text{identify FDD inter}}} + \underline{T_{\text{SI}}} + \underline{T_{\text{RA}}}$ 

$$T_{\text{reselection, FDD}} = T_{\text{identify FDD inter}} + 100ms + T_{\text{SI}} + T_{\text{RA}}$$

where

$$T_{identify FDD inter} = Specified in 8.4A.2.4.1$$

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

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

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

#### 5.4.23.32.4 Inter-RAT cell re-selection

The cell re-selection delay in CELL\_FACH state for inter-RAT cells shall be less than:

$$T_{\text{reselection, GSM}} = T_{\text{identify GSM}} + T_{\text{Measurement GSM}} + T_{\text{BCCH}} + T_{\text{RA}}$$

where

T<sub>identify GSM</sub>

= Is the worst case time for identification of one previously not identified GSM cell and is specified in TS25.225 Annex A.

 $T_{\text{Measurement GSM}} \quad \text{is the worst case time for measuring one previously identified GSM carrier}.$ 

$$T_{\text{Measurement GSM}} = Max \left\{ [480]ms, 8 \cdot \frac{N_{carriers}}{N_{GSM carrier RSSI}} \cdot T_{meas} \right\}$$

where

NT

N <sub>carriers</sub>	is the number of GSM carriers in the Inter-RAT cell into list
$N_{GSM\ carrier\ RSSI}$	can be derived from the values in table 8.7 section 8.4A.2.5.1.
T <sub>RA</sub>	= The additional delay caused by the random access procedure.
m	

 $T_{BCCH}$  = the maximum time allowed to read BCCH data from GSM cell [TS 45.008].

is the number of CCM comisms in the Inter DAT call info lies

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

### 5.4.3.3 Interruption time

The interruption time, i. e. the time between the last TTI the UE monitors the FACH channel on the serving cell and the time the UE starts to transmit in the target cell.

The UE shall perform the cell re-selection with minimum interruption time.

In case the UE reselects a UTRAN cell the interruption time shall not exceed  $T_{RA}+T_{SI}+50$ ms.

In case the UE reselects a GSM cell the interruption time shall not exceed  $T_{RA}+T_{BCCH}+50$ ms.

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

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

<u> $T_{BCCH}$ </u> = the maximum time allowed to read BCCH data from GSM cell [TS 45.008].

R4-020667

## 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

	CR-Form-v5.1							
	CHANGE REQUEST							
¥	<b>25.123</b> CR <b>203 # rev</b> - <b>#</b> Current version: <b>4.4.0 #</b>							
For <u><b>HELP</b></u> on using this form, see bottom of this page or look at the pop-up text over the $#$ symbols.								
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network								
Title: ೫	Correction of section A.5 for 1.28 Mcps TDD option							
Source: अ	RAN WG4							
Work item code: %	LCRTDD-RF Date: # 17/5/2002							
Category: ₩	FRelease: %Rel-4Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D tetailed explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5							
Reason for change	<ul> <li>2. Some cases are not explicitly specified.</li> <li>2. Some parameters need to be corrected.</li> <li>3. Square brackets are still in place in section A.5.</li> </ul>							
Summary of chang	<ul> <li>1. Words are added in some cases not explicitly specified.</li> <li>2. Correction of some parameters in tables.</li> <li>3. Removal of square brackets.</li> </ul>							
Consequences if not approved:	* Test cases would be ambiguous and some may be wrong. <u>Isolated Impact Analysis:</u> Correction of test cases where the specification was ambiguous or not sufficiently explicit.							
Clauses affected:	<mark>ች A.5</mark>							
Other specs affected:	%       Other core specifications       %         X       Test specifications       34.122         O&M Specifications       O&M Specifications							
Other comments:	# Equivalent CRs in other Releases: CR204 cat. A to 25.123 v5.0.0							

### How to create CRs using this form:

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

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

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

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

## A.5.1.2 1.28Mcps TDD option

### A.5.1.2.1 Handover to intra-frequency cell

### A.5.1.2.1.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the intra-frequency handover delay in CELL\_DCH state in the single carrier case as reported in section 5.1.2.1.2.

The test parameters are given in Table A.5.1.5 and A.5.1.6 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that PCCPCH RSCP and SFN-CFN observed timed difference shall be reported together with Event 1G. 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 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].

Parameter		Unit	Value	Comment
DPCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2.2
Power Contro	ol		On	
Target quality	y value on DPCH	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
0		dB	0	cell-individual-offset The value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigg	jer	ms	0	
Filter coefficie	ent		0	
Monitored cell list size			6 TDD neighbours on Channel 1	
T1		S	5	
T2		S	5	
Т3		S	5	

### Table A.5.1.6: Cell specific test parameters for intra-frequency handover

Parameter	Unit	Cell 1						Cell 2					
Timeslot Number		0 5			0			5					
		T1	T2 T3	3 T1	T2	T3	T1	T2	T3	T1	T2	T3	
UTRA RF Channel Number		Channel 1					Channel 1						
PCCPCH_Ec/lor	dB		-3		<u>n.a.</u>		-3			<u>n.a.</u>			
DPCH_Ec/lor	dB	<u>n</u>	.a.	No	ote1	n.a.	<u>n.a.</u>			n.	a.	Note1	
OCNS_Ec/lor	<u>dB</u>	No	Note2 Note2			Note2			Note2				
$\hat{I}_{or}/I_{oc}$	dB		3	[ <del>x]</del> <u>3</u> -Inf. 5		5	<u>-1</u>	<u>nf</u>	<del>[x]</del> 5				
I <sub>oc</sub>	dBm/1. 28 MHz	-70											
PCCPCH_RSCP	dBm	-	70	<u>n.a.</u>			-Inf.	-6	68	<u>n.a.</u>		<u>a.</u>	
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>a</sub>													

### A.5.1.2.1.2 Test Requirements

The UE shall start to transmit the UL DPCH to cell 2 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%.

### A.5.1.2.2 Handover to inter-frequency cell

### A.5.1.2.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL\_DCH in the dual <u>carrier case</u> as reported in section 5.1.2.1.2.

The test consists of two three successive time periods, with a time duration  $T1_{,and} T2 and T3$ . The test parameters are given in tables A.5.1.7 and A.5.1.8 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The PCCPCH RSCP and SFN-CFN observed timed difference 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 at beginning of T32 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]

Para	Parameter Unit V		Value	Comment			
DPCH para	DPCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2.2			
Power Cont							
Target quality value on DPCH		BLER	0.01				
Initial	Active cell		Cell 1				
conditions	Neighbour cell		Cell 2				
Final conditions	Active cell		Cell 2				
Threshold n frequency	Threshold non used frequency		-75	Absolute RSCP threshold for event 2C			
0			0	cell-individual-offset The value shall be used for all cells in the test.			
Hysteresis		dB	0				
Time to Trig	Iger	ms	0				
Filter coeffic	Filter coefficient		0				
Monitored cell list size			6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2				
T1		S	<u>510-</u>				
T2			<u>10</u> 5				
<u>T3</u>		S	<u>5</u>				

 Table A.5.1.7: General test parameters for inter-frequency handover

Parameter	Unit			Ce	1					Ce	ell 2				
Timeslot Number			0			5			0			5			
		T1	T2	<u>T3</u>	T1	T2	<u>T3</u>	T1	T2	<u>T3</u>	T1	T2	<u>T3</u>		
UTRA RF Channel Number				Chan	nel 1					Cha	nnel 2				
PCCPCH_Ec/lor	dB		-3			<u>n.a.</u>			-3			<u>n.a</u> .			
DPCH_Ec/lor	dB	<u>n.a.</u>		<u>n.a.</u>		te1	n.a.	<u>n.a.</u>			<u>n.a.</u>		n.	а	Note1
OCNS_Ec/lor	<u>dB</u>	١	Note2			Note2			Note2			n.a Note2			
$\hat{I}_{or}/I_{oc}$	dB		3		<del>[×</del>	<u>]3</u>		<u>-Inf</u>	6	6	<u>-Inf</u> [x	}	<u>6</u>		
I <sub>oc</sub>	dBm/1.28 MHz						-7	<b>'</b> 0							
PCCPCH_RSCP	dBm		-70			<u>n.a.</u>		<u>-Inf</u>	-6	67		<u>n.a</u> .			
Propagation Condition							AW	'GN							
Note 1: The DPCH lev Note 2: The power of t						ke the t	total po	wer fro	m the c	cell to b	be equa	al to I			

#### TableA.5.1.8: Cell Specific parameters for inter-frequency handover

## A.5.1.2.2.2 Test Requirements

The UE shall start to transmit the UL DPCH to cell 2 less than [40] ms from the beginning of time period T32.

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

# <Next Change>

# A.5.4.2 1.28 Mcps TDD option

# A.5.4.2.1 One frequency present in neighbour list

## A.5.4.2.1.1 Test purpose and Environment

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL\_FACH state in the single carrier case reported in section 5.4.3.2.1.

The test parameters are given in Tables A.5.4.9to A.5.4.12

#### Table A.5.4.9: General test parameters for Cell Re-selection in CELL\_FACH

	Parameter	Unit	Value	Comment
initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
final condition	Active cell		Cell2	
	HCS		Not used	
UE_	TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
	Qrxlevmin	dBm	-103	The value shall be used for all cells in the test.
	s Service Class (ASC#0) Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T <sub>SI</sub>	S	1.28	The value shall be used for all cells in the test.
	T1	S	<u>1</u> 5	
	T2	S	<u>1</u> 5	

#### Table A.5.4.10: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	kbps	35.2
Channel symbol rate	ksps	17.6
Slot Format #	-	0; 2
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Common Midamble

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	20 ms
Type of Error Protection	Convolution Coding
Coding Rate	1/2
Rate Matching attribute	256
Size of CRC	16

Parameter	Unit		Ce	ll 1			Ce	ll 2			Ce	II 3		
Timeslot Number		(	)	DW	PTS	(	)	DW	PTS	(	0	DW	PTS	
		T1	T2	T1	T2									
UTRA RF Channel Number			Char	nel 1			Char	nel 1			Char	nel 1		
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
DwPCH_Ec/lor	dB			0	0			0	0			0	0	
$\hat{I}_{or}/I_{oc}$	dB	<del>[</del> 9 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74			
Qoffset1 <sub>s,n</sub>	dB	· ·	C1, C5:0	C3:0; C1 ; C1,C6:	·		2, C5: 0	C3:0; C2 ; C2, C6:			1: 0; C3, C3, C5: 0	; C3, C6:		
Qhyst1 <sub>s</sub>	dB			)				)				)		
Treselection				)				)			0 not sent not sent			
Sintrasearch	dB		not	sent			not	sent			not	sent		
FACH measurement occasion info			not	sent			not	sent			not sent           not sent           Cell 6           0           T1         T2         T		sent	
			Ce	II 4			Ce	ll 5			Ce			
Timeslot		(			PTS	(	-		PTS		-		PTS	
		T1	T2	T1	T2									
UTRA RF Channel Number			Char	nel 1			Char	nnel 1			Char	nnel 1		
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
DwPCH_Ec/lor	dB			0	0			0	0			0	0	
$\hat{I}_{or}/I_{oc}$	dB	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>										
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74			
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4 C4, C6:				C2:0; C C5, C6:			: 0; C6, 0 C6, C4:0;			
Qhyst1₅	dB		(	)			(	C			(	C		
Treselection			(	)			(	C			(	C		
Sintrasearch	dB		not	sent		not sent					not	sent		
FACH measurement occasion info		not sent			not sent				not sent					
I <sub>oc</sub>	dBm/1. 28 MHz						-7	70						
Propagation Condition		1					AW	/GN						

Note: S-CCPCH is located in an other downlink TS than TS0.

#### A.5.4.2.1.2 Test Requirements

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send SYNCH-UL sequence in the UpPTS for sending the RRC CONNECTION REQUEST to perform a CELL UPDATE message with cause cell reselection.

The cell re-selection delay shall be less than [1.6] s.

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

NOTE:

The cell re-selection delay can be expressed as:

$$T_{reselection, intra} = T_{Measurement Period Intra} + 40ms + T_{SI} + T_{RA}$$

where:

 $T_{Measurement\ Period\ Intra}$ 

iod Intra Specified in 8.4A.2.2.2 gives [200] ms for this test case.

 $T_{SI}$ 

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

 $T_{RA}$  The additional delay caused by the random access procedure described in TS25.224. In this test case the persistence value is 1 thus  $T_{RA}$  is set to 35ms in the test case.

This gives a total of 1.55s, allow 1.6s in the test case.

## A.5.4.2.2 Two frequency present in neighbour list

#### A.5.4.2.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL\_FACH state in section 5.4.2.1.2. The test parameters are given in Tables A.5.4.13 to A.5.4.16

Table A.5.4.13: General test parameters for Cell Re-selection in CELL\_FACH

	Parameter	Unit	Value	Comment
initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
final condition	Active cell		Cell2	
	HCS		Not used	
UE_	_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
	Qrxlevmin	dBm	-103	The value shall be used for all cells in the test.
	s Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T <sub>SI</sub>	S	1.28	The value shall be used for all cells in the test.
	T1	S	1 <u>5</u> 0	
	T2	S	15	

#### Table A.5.4.14: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	kbps	35.2
Channel symbol rate	ksps	17.6
Slot Format #	-	0; 2
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Common Midamble

Table A.5.4.15: 1	<b>Fransport</b>	channel	parameters	for S-CCPCH
-------------------	------------------	---------	------------	-------------

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	20 ms
Type of Error Protection	Convolution Coding
Coding Rate	1/2
Rate Matching attribute	256
Size of CRC	16

#### Table A.5.4.16: Cell specific test parameters for Cell re-selection in CELL\_FACH state

Parameter	Unit		Ce	II 1			Ce	ll 2			Ce	II 3	
Timeslot Number		(			PTS	(	)		PTS	(	0		PTS
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel			Chan	nel 1				nel 2			Char	nel 1	
Number													
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
$\hat{I}_{or}/I_{oc}$	dB	<del>[9]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	{7 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>
P¢CPCH RSCP	dBm	<del>[</del> -64 <del>]</del>	<del>[</del> -66 <del>]</del>			[-66]	<del>[</del> -64 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>		
Qoffset1 <sub>s,n</sub>	dB		2: 0; C1, C1, C5:0;				: 0; C2, 0 22, C5: 0						
Qhyst1 <sub>s</sub>	dBm		(				-	)					
Treselection	S		(	)			(	)			(	C	
Sintrasearch	dB		not	sent			not	sent			not	sent	
Sintersearch	dB		not					sent					
FACH measurement occasion info				sent				sent					
FACH measurement occasion cycle length			2	4			4	4			4	4	
Inter-frequency TDD measurement			TR	UE			TR	UE			TRUE		
indicator Inter-frequency FDD													
measurement			FAL	SE		FALSE				FALSE Cell 6			
			Ce	II 4			Ce	II 5			Ce	ll 6	
Timeslot		(	)		PTS	(	)		PTS	(			PTS
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Cha	nnel			Char	nel 2			Cha	nnel	1
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
$\hat{I}_{or}/I_{oc}$	dB	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1]
PCCPCH RSCP	dBm	<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>		
Qoffset1 <sub>s,n</sub>	dB		4, C1: 0; 3:0C4, C				1: 0; C5, C5, C4:0						
Qhyst1 <sub>s</sub>	dB		(					)					
Treselection	S		(	)			(	)			(	C	
Sintrasearch	dB		not	sent			not	sent			not	sent	
Sintersearch	dB			sent			not	sent					
FACH measurement occasion info				sent				sent					
FACH measurement occasion cycle length			4				4	1			4	4	
Inter-frequency TDD measurement indicator			TR	UE			TR	UE			TR	UE	
Inter-frequency FDD measurement indicator			FAL	SE		FALSE FALSE			0         0           1]         [-1]         [-1]           74]         [-74]         [-74]           3, C1: 0; C3, C2:0; C3, C3, C3, C3, C5: 0; C3:C6:0         0           0         0           not sent         0           not sent         0           not sent         0           1         TRUE           FALSE         Cell 6           0         DWP1           T1         T2         T1           Channel         0           -1]         [-1]         [-1]           -3         -3         0           -1]         [-1]         [-1]           74]         [-74]         0           -1]         [-1]         [-1]           5, C1: 0; C6, C2:0; C2				
I <sub>oc</sub>	dBm/1. 28 MHz					•	-7	70		•	0 not sent not sent 1 A TRUE FALSE Cell 6 0 DWPTS T1 T2 T1 1 Channel -3 -3 0 -1} [-1] [-1] [-1] [- -74] [-74] 0 -1] [-1] [-1] [- -74] [-74] [- 6, C1: 0; C6, C2:0; C6,C3: C6, C4:0; C6:C5:0 0 0 not sent not sent not sent 1 A TRUE		
Propagation Condition							AM	/GN					

#### A.5.4.2.2.2 **Test Requirements**

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send SYNCH-UL sequence in the UpPTS for sending the RRC CONNECTION REQUEST to perform a CELL UPDATE message with cause cell reselection.

The cell re-selection delay shall be less than [2] s.

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

#### NOTE:

The cell re-selection delay can be expressed as:

 $T_{\rm reselection,\,TDD,inter}$  =  $T_{\rm measurement\,\,inter}$  + 40 ms +  $T_{SI}$  +  $T_{RA}$  ,

where:

T<sub>measurement inter</sub> Specified in 8.4A.2.3.2 gives [480]ms for this test case.

- T<sub>SI</sub> Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.
- $T_{RA}$  The additional delay caused by the random access procedure described in TS25.224. In this test case the persistence value is 1 thus  $T_{RA}$  is set to 35ms in the test case.

This gives a total of 1.84s, allow 2s in the test case.

R4-020668

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

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

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

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

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

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

# A.5.1.2 1.28Mcps TDD option

## A.5.1.2.1 Handover to intra-frequency cell

#### A.5.1.2.1.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the intra-frequency handover delay in CELL\_DCH state in the single carrier case as reported in section 5.1.2.1.2.

The test parameters are given in Table A.5.1.5 and A.5.1.6 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that PCCPCH RSCP and SFN-CFN observed timed difference shall be reported together with Event 1G. 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 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].

Parameter		Unit	Value	Comment
DPCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2.2
Power Contro	ol		On	
Target quality	y value on DPCH	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbouring cell		Cell 2	
Final condition	Final Active cell		Cell 2	
0		dB	0	cell-individual-offset The value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigg	jer	ms	0	
Filter coefficie	ent		0	
Monitored cell list size			6 TDD neighbours on Channel 1	
T1		S	5	
T2		S	5	
T3		S	5	

#### Table A.5.1.6: Cell specific test parameters for intra-frequency handover

Parameter	Unit		Cell 1 Cell 2									
Timeslot Number		0			5		0			5		
		T1	T2 T3	3 T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number			Channel 1 Channel									
PCCPCH_Ec/lor	dB		-3		<u>n.a.</u>			-3			<u>n.a</u>	a <u>.</u>
DPCH_Ec/lor	dB	n	.a.	N	ote1	n.a.		<u>n.a.</u>		n.a.		Note1
OCNS_Ec/lor	<u>dB</u>	No	ote2		Note2		Note2			Note2		
$\hat{I}_{or}/I_{oc}$	dB		3	f	<del>x]</del> 3		-Inf.		5	<u>-1</u>	<u>nf</u>	<del>[x]</del> 5
I <sub>oc</sub>	dBm/1. 28 MHz						-70					
PCCPCH_RSCP	dBm	-	70		<u>n.a.</u>		-Inf.	-6	68		<u>n.a</u>	<u>a.</u>
Propagation Condition						1	AWGN					
	Note 1: The DPCH level is controlled by the power control loop											

#### A.5.1.2.1.2 Test Requirements

The UE shall start to transmit the UL DPCH to cell 2 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%.

## A.5.1.2.2 Handover to inter-frequency cell

#### A.5.1.2.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL\_DCH <u>in the dual</u> <u>carrier case</u> as reported in section 5.1.2.1.2.

The test consists of two three successive time periods, with a time duration  $T1_{,and} T2 and T3$ . The test parameters are given in tables A.5.1.7 and A.5.1.8 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The PCCPCH RSCP and SFN-CFN observed timed difference 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 at beginning of T32 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]

Para	meter	Unit	Value	Comment
DPCH para	meters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2.2
Power Cont	Power Control		On	
Target quali DPCH	ity value on	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold n frequency	ion used	dBm	-75	Absolute RSCP threshold for event 2C
0		dB	0	cell-individual-offset The value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trig	lger	ms	0	
Filter coeffic	cient		0	
Monitored c	ell list size		<u>6 TDD neighbours on Channel 1</u> <u>6 TDD neighbours on Channel 2</u>	
T1		S	<u>5</u> <del>10_</del>	
T2		s	<u>10</u> 5	
<u>T3</u>		<u>s</u>	<u>5</u>	

 Table A.5.1.7: General test parameters for inter-frequency handover

Parameter	Unit		Cell 1 Cell 2										
Timeslot Number		0				5			0			5	
		T1	T2	<u>T3</u>	T1	T2	<u>T3</u>	T1	T2	<u>T3</u>	T1	T2	<u>T3</u>
UTRA RF Channel Number			Channel 1 Channel 2										
PCCPCH_Ec/lor	dB		-3			<u>n.a.</u>			-3			<u>n.a</u> .	<u>.</u>
DPCH_Ec/lor	dB		<u>n.a.</u> Note1 n.a. <u>n.a.</u>		<u>n.a.</u>			а	Note1				
OCNS <u>Ec/lor</u>	<u>dB</u>	1	Note2		Note2		Note2			Note2			
$\hat{I}_{or}/I_{oc}$	dB		3		<del>[x]</del> 3		<u>-Inf</u>	6	6	<u>-Inf</u> [x	}	<u>6</u>	
I <sub>oc</sub>	dBm/1.28 MHz						-7	<b>'</b> 0					
PCCPCH_RSCP	dBm		-70			<u>n.a.</u>		<u>-Inf</u>	-6	67		<u>n.a</u>	<u>.</u>
Propagation Condition							AW	'GN					
Note 1: The DPCH lev Note 2: The power of t	el is controlle	ed by the annel th	e powe nat is a	er contr dded s	ol loop hall ma	ke the	total po	wer fro	m the c	cell to b	be equa	al to I	

#### TableA.5.1.8: Cell Specific parameters for inter-frequency handover

## A.5.1.2.2.2 Test Requirements

The UE shall start to transmit the UL DPCH to cell 2 less than [40] ms from the beginning of time period T32.

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

# <Next Change>

# A.5.4.2 1.28 Mcps TDD option

# A.5.4.2.1 One frequency present in neighbour list

## A.5.4.2.1.1 Test purpose and Environment

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL\_FACH state in the single carrier case reported in section 5.4.3.2.1.

The test parameters are given in Tables A.5.4.9to A.5.4.12

#### Table A.5.4.9: General test parameters for Cell Re-selection in CELL\_FACH

	Parameter	Unit	Value	Comment					
initial	initial Active cell		Cell1						
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6						
final condition	Active cell		Cell2						
	HCS		Not used						
UE_T	UE_TXPWR_MAX_RACH		UE_TXPWR_MAX_RACH d		21	The value shall be used for all cells in the test.			
	Qrxlevmin	dBm	-103	The value shall be used for all cells in the test.					
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.					
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test.					
T1		S	<u>1</u> 5						
	T2	S	<u>1</u> 5						

#### Table A.5.4.10: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	kbps	35.2
Channel symbol rate	ksps	17.6
Slot Format #	-	0; 2
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Common Midamble

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	20 ms
Type of Error Protection	Convolution Coding
Coding Rate	1/2
Rate Matching attribute	256
Size of CRC	16

Table A.5.4.12: Cell specific test parameters for Cell Re-selection in CEL	L_FACH
----------------------------------------------------------------------------	--------

Parameter	Unit	Cell 1				Cell 2				Cell 3			
Timeslot Number		0 DWPTS			0 DWPTS			(	0	DW	PTS		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Char	nel 1		Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
$\hat{I}_{or}/I_{oc}$	dB	<del>[</del> 9 <del>]</del>	{7 <del>]</del>	<del>[</del> 9 <del>]</del>	{7 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1 <sub>s,n</sub>	dB	,	, ,	C3:0; C1 ); C1,C6:	,	,	: 0; C2, 0 2, C5: 0	,	,	· · · ·	1: 0; C3, C3, C5: 0	· · ·	,
Qhyst1₅	dB			0				)				)	
Treselection			(	0				)			(	)	
Sintrasearch	dB		not	sent			not	sent		not sent			
FACH measurement occasion info		not sent				not sent				not sent			
		Cell 4			Cell 5					Ce	ll 6		
Timeslot		(	)	DW	PTS	0 DWPTS			0 DWPTS			PTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1		Channel 1			Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
$\hat{I}_{or}/I_{oc}$	dB	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>				
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4; C4; C4; C6;		C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 <sub>s</sub>	dB		(	0			(	)			(	)	
Treselection			(	0		0					(	C	
Sintrasearch	dB		not	sent			not	sent			not	sent	
FACH measurement occasion info		not sent				not sent				not sent			
I <sub>oc</sub>	dBm/1. 28 MHz						-7	70					
Propagation Condition		1	AWGN										

Note: S-CCPCH is located in an other downlink TS than TS0.

#### A.5.4.2.1.2 Test Requirements

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send SYNCH-UL sequence in the UpPTS for sending the RRC CONNECTION REQUEST to perform a CELL UPDATE message with cause cell reselection.

The cell re-selection delay shall be less than [1.6] s.

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

NOTE:

The cell re-selection delay can be expressed as:

$$T_{reselection, intra} = T_{Measurement Period Intra} + 40ms + T_{SI} + T_{RA}$$

where:

 $T_{Measurement\ Period\ Intra}$ 

iod Intra Specified in 8.4A.2.2.2 gives [200] ms for this test case.

 $T_{SI}$ 

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

 $T_{RA}$  The additional delay caused by the random access procedure described in TS25.224. In this test case the persistence value is 1 thus  $T_{RA}$  is set to 35ms in the test case.

This gives a total of 1.55s, allow 1.6s in the test case.

## A.5.4.2.2 Two frequency present in neighbour list

#### A.5.4.2.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL\_FACH state in section 5.4.2.1.2. The test parameters are given in Tables A.5.4.13 to A.5.4.16

Table A.5.4.13: General test parameters for Cell Re-selection in CELL\_FACH

	Parameter	Unit	Value	Comment
initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
final condition	Active cell		Cell2	
	HCS		Not used	
UE_	_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
	Qrxlevmin	dBm	-103	The value shall be used for all cells in the test.
	s Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T <sub>SI</sub>	S	1.28	The value shall be used for all cells in the test.
	T1	S	1 <u>5</u> 0	
	T2	S	15	

#### Table A.5.4.14: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	kbps	35.2
Channel symbol rate	ksps	17.6
Slot Format #	-	0; 2
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Common Midamble

Table A.5.4.15:	Transport	channel	parameters	for S-CCPCH
-----------------	-----------	---------	------------	-------------

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	20 ms
Type of Error Protection	Convolution Coding
Coding Rate	1/2
Rate Matching attribute	256
Size of CRC	16

#### Table A.5.4.16: Cell specific test parameters for Cell re-selection in CELL\_FACH state

Parameter	Unit		Ce	ll 1			Ce	ll 2		Cell 3			
Timeslot Number		(	)	DW	PTS	0 DWPTS			(	C	DW	PTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel			Chan	inel 1			Chan	nel 2			Char	nel 1	
Number													
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
$\hat{I}_{or}/I_{oc}$	dB	<del>[</del> 9 <del>]</del>	<del>[</del> 7]	<del>[</del> 9 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> 7 <del>]</del>	<del>[</del> 9 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1]
PCCPCH RSCP	dBm	<del>[</del> -64 <del>]</del>	<del>[</del> -66 <del>]</del>			<del>[</del> -66 <del>]</del>	<del>[</del> -64 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>		
Qoffset1 <sub>s,n</sub>	dB		2: 0; C1, C1, C5:0;	,	·		: 0; C2, 0 C2, C5: 0				1: 0; C3, C3, C5: 0		
Qhyst1 <sub>s</sub>	dBm		(	)			(	)			(	)	
Treselection	S		(	)			(	)			(	)	
Sintrasearch	dB		not	sent			not	sent			not	sent	
Sintersearch	dB		not	sent			not	sent				sent	
FACH measurement occasion info			not	sent			not	sent			not	sent	
FACH measurement occasion cycle length			2	1			2	1			2	1	
Inter-frequency TDD measurement			TR	UE			TR	UE		TRUE			
indicator Inter-frequency FDD													
measurement indicator		FALSE			FALSE		FALSE						
			Ce				Ce	II 5			Ce	ll 6	
Timeslot			)		PTS		0		PTS		0		PTS
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Cha	nnel			Chan	nel 2			Cha	nnel	
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
$\hat{I}_{or}/I_{oc}$	dB	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1 <del>]</del>	<del>[</del> -1]
PCCPCH RSCP	dBm	<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>			<del>[</del> -74 <del>]</del>	<del>[</del> -74 <del>]</del>		
Qoffset1 <sub>s,n</sub>	dB		4, C1: 0; 3:0C4, C			C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5:C6:0			C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6:C5:0				
Qhyst1 <sub>s</sub>	dB		(	)			(					)	
Treselection	S		(	)			(	0			0		
Sintrasearch	dB		not	sent			not sent			not sent			
Sintersearch	dB		not	sent			not	sent		not sent			
FACH measurement occasion info			not	sent		not sent				not sent			
FACH measurement			2	1		4			4				
occasion cycle length Inter-frequency TDD													
measurement indicator		TRUE		TRUE			TRUE						
Inter-frequency FDD measurement indicator			FALSE		FALSE			FALSE					
$I_{oc}$	dBm/1. 28 MHz						-7	70					
Propagation Condition			AWGN										

#### A.5.4.2.2.2 **Test Requirements**

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send SYNCH-UL sequence in the UpPTS for sending the RRC CONNECTION REQUEST to perform a CELL UPDATE message with cause cell reselection.

The cell re-selection delay shall be less than [2] s.

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

#### NOTE:

The cell re-selection delay can be expressed as:

 $T_{\rm reselection,\,TDD,inter}$  =  $T_{\rm measurement\,\,inter}$  + 40 ms +  $T_{SI}$  +  $T_{RA}$  ,

where:

T<sub>measurement inter</sub> Specified in 8.4A.2.3.2 gives [480]ms for this test case.

- T<sub>SI</sub> Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.
- $T_{RA}$  The additional delay caused by the random access procedure described in TS25.224. In this test case the persistence value is 1 thus  $T_{RA}$  is set to 35ms in the test case.

This gives a total of 1.84s, allow 2s in the test case.

R4-020669

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

						CR-Form-v5.1		
		CHAN		UEST	•			
ж	<mark>25.123</mark>	CR <mark>205</mark>	жrev	<b>-</b> <sup>#</sup>	Current vers	<sup>ion:</sup> 4.4.0 <sup>#</sup>		
For <u>HELP</u> on us	For <b>HELP</b> on using this form, see bottom of this page or look at the pop-up text over the <b>#</b> symbols.							
Proposed change a	ffects: ೫	(U)SIM	ME/UE X	Radio Ad	ccess Network	Core Network		
Title: ೫	Correction	of timing adv	ance character	istics for 1	.28 Mcps TDI	D option		
Source: ೫	RAN WG4							
Work item code: ₩	LCRTDD-I	RF			Date: ♯	17/5/2002		
	Use <u>one</u> of th F (corre A (corre B (addi C (func D (edite Detailed expl	esponds to a co ition of feature), tional modificat orial modificatio	orrection in an ea ion of feature) n) above categorie		2 R96 R97 R98 R99 R99 REL-4	Rel-4 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)		
Reason for change.		ning Advance	in timing chara mapping and a			ould be specified in		
Summary of change	2. T <sub>AD</sub>		ng characterst d accuracy rec		be deleted in s	section 7 and specified		
Consequences if not approved:	<u>Isolat</u>	ed Impact Ana	alysis: Does no	t affect im	plementations	because it corrects a sufficiently explicit.		
Clauses affected:	<mark>೫ 7;9</mark>							
Other specs affected:	X Te	ner core speci st specification M Specification	าร	34.122				
Other comments:	ະ Equiv	alent CRs in c	ther Releases	: CR206 c	at. A to 25.12	3 v5.0.0		

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

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

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

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

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

# 7 Timing characteristics

# 7.1 Timing Advance

# 7.1.1 3.84 Mcps TDD option

### 7.1.1.1 Introduction

The timing advance is initiated from UTRAN with an RRC message that implies an adjustement of the timing advance, see TS 25.331 section 8.6.26.

To update timing advance of a UE, the UTRAN measures RX Timing deviation. The measurements are defined in TS 25.225 and measurement accuracies are specified in section 9.

## 7.1.1.2 Requirements

#### 7.1.1.2.1 Timing Advance adjustment accuracy

The UE shall adjust the timing of its transmissions with an accuracy better than or equal to  $\pm 0.5$  chip to the signalled timing advance value.

### 7.1.1.2.2 Timing Advance adjustment delay

The UE shall adjust the timing of its transmission at the designated activation time, when the indicated activation time is later than  $D_{TA}$  msec from the end of the last TTI containing the RRC message implying an adjustement of the timing advance.

 $D_{TA}$  equals the RRC procedure delay of the RRC message implying an adjustement of the timing advance as defined in TS25.331 section 13.5.

# 7.1.2 1.28 Mcps TDD option

For 1.28 Mcps TDD the timing advance in the UE is adjusted by means of uplink synchronization. For the random access procedure the node B commands the UE to adjust its synchronisation shift by means of signalling the received position of the UpPTS in the FPACH. During the connection the node B measures the timing in the uplink and transmits a SS (Synchronization Shift) command to the UE at least once per sub-frame.

These SS commands determined whether the UE synchronization shift is either left unchanged, or adjusted 1 step up or 1 step down. The step size of the SS adjustment is (k/8)Tc where k (=1,2, ...,8) is signalled by higher layer signalling.

### 7.1.2.1 Uplink synchronization control requirements for UE for 1.28 Mcps TDD option

Uplink synchronization control is the ability of the UE transmitter to adjust its TX timing in accordance with one or more SS commands received in the downlink.

### 7.1.2.1.1 Uplink synchronization control steps

The SS step is the change in UE transmission timing in response to a single SS command, SS\_cmd, received by the UE.

#### 7.1.2.1.1.1 Minimum requirement

The UE transmitter shall have the capability of changing the transmission timing with a step size of 1/8, 2/8, 3/8, ..., 1 chip according to the value of  $\Delta_{SS}$ , within n=(1,2,...,14) time slots excluding special timeslots (DwPTS, GP, UpPTS) after the SS\_cmd arrived (closed loop). For the open loop any step being a multiple of 1/8 chip has to be allowed.

- a) The minimum transmission timing step  $\Delta_{SS,min}$  due to closed loop uplink synchronization control shall be within the range shown in Table 7.1.
- b) In case uplink synchronization control implies to perform a bigger step-larger adjustment than the minimum step the UE shall perform the a multiple integer number of the minimum steps m. Within the implementation grid of the applicable timing steps of the UE the step being closest to the required step should be executed.

#### Table 7.1: Uplink synchronisation control range

SS cmd	Uplink synchronisation control range for minimum step 1/8 chip step size			
••_•	Lower	Upper		
Up	1/9 chip <del>– 0.1 ppm</del>	1/7 chip <del>+ 0.1 ppm</del>		
Down	1/9 chip <del>– 0.1 ppm</del>	1/7 chip <del>+ 0.1 ppm</del>		

#### 7.1.2.1.2 Timing Advance (T<sub>ADV</sub>) for 1.28 Mcps TDD

This measurement refers to TS25.225 subsection 5.1.14.

7.1.2.1.2.1 Accuracy requirements

#### Table 7.2

Parameter	11		Conditions
Parameter	Unit	Accuracy	Range [chips]
Timing Advance	Chips period	<del>+/- 0.125</del>	<del>0,, 255.875</del>

7.1.2.1.2.2 Range/mapping

The reporting range for *Timing Advance* is from 0 ... 255.875 chips.

In table 7.3 the mapping of the measured quantity is defined. The signalling range may be larger than the guaranteed accuracy range.

#### Table 7.3

Reported value	Measured quantity value	Unit
TIMING_ADVANCE_0000	Timing Advance < 0	chip
TIMING_ADVANCE_0001	0 ≤ Timing Advance < 0.125	chip
TIMING_ADVANCE_0002	0.125 ≤ Timing Advance < 0.25	chip
	<del></del>	<del></del>
TIMING_ADVANCE_1024	127.875≤ Timing Advance < 128	<del>chip</del>
<del></del>	<del></del>	<del></del>
TIMING_ADVANCE_2045	255.625	chip
TIMING_ADVANCE_2046	<del>255.75 ≤ Timing Advance &lt; 255.875</del>	chip
TIMING_ADVANCE_2047	<del>255.875 ≤ RX Timing Advance</del>	chip

NOTE: This measurement can be used for timing advance (synchronisation shift) calculation for uplink synchronisation or location services.

### <Next Change>

# 9.1.2 Performance for UE Measurements in Uplink (TX)

The output power is defined as the average power of the transmit timeslot, and is measured with a filter that has a Root-Raised Cosine (RRC) filter response with a roll off  $\alpha = 0,22$  and a bandwidth equal to the chip rate.

## 9.1.2.1 UE transmitted power

The measurement period for CELL\_DCH state is 1 slot.

#### 9.1.2.1.1 Absolute accuracy requirements

#### Table 9.28 UE transmitted power absolute accuracy

Parameter	Unit	PUEMAX		
Farameter	Unit		21dBm	
UE transmitted power=PUEMAX	dB	+1/-3	±2	
UE transmitted power=PUEMAX-1	dB	+1,5/-3,5	±2,5	
UE transmitted power=PUEMAX-2	dB	+2/-4	±3	
UE transmitted power=PUEMAX-3	dB	+2,5/-4,5	±3,5	
PUEMAX-10≤UE transmitted power <puemax-3< td=""><td>dB</td><td>+3/-5</td><td>±4</td></puemax-3<>	dB	+3/-5	±4	

- Note 1: User equipment maximum output power, PUEMAX, is the maximum output power level without tolerance defined for the power class of the UE in 3GPP TS 25.102 "UTRA (UE) TDD; Radio Transmission and Reception".
- Note 2: UE transmitted power is the reported value.

### 9.1.2.1.2 Range/mapping

The reporting range for UE transmitted power is from -50 ...+34 dBm.

In table 9.29 mapping of the measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Reported value	Measured quantity value	Unit
UE_TX_POWER _021	$-50 \le UE$ transmitted power < -49	dBm
UE_TX_POWER _022	-49 ≤ UE transmitted power < -48	dBm
UE_TX_POWER _023	$-48 \le UE$ transmitted power < -47	dBm
UE_TX_POWER _102	$31 \leq UE$ transmitted power < 32	dBm
UE_TX_POWER _103	$32 \leq UE$ transmitted power < 33	dBm
UE_TX_POWER _104	$33 \le UE$ transmitted power < 34	dBm

#### Table 9.29

9.1.2.2 Timing Advance (T<sub>ADV</sub>) for 1.28 Mcps TDD

This measurement refers to TS25.225 subsection 5.1.14.

#### 9.1.2.2.1 Accuracy requirements

#### Table 9.28A

Demonster	11	•	Conditions
Parameter	<u>Unit</u>	Accuracy	Range [chips]
Timing Advance	Chips period	+/- 0.125	<u>0,, 255.875</u>

9.1.2.2.2 Range/mapping

The reporting range for *Timing Advance* is from 0 ... 255.875 chips.

In table 9.29A the mapping of the measured quantity is defined. The signalling range may be larger than the guaranteed accuracy range.

#### Table 9.29A

Reported value	Measured quantity value	Unit
TIMING ADVANCE 0000	Timing Advance < 0	<u>chip</u>
TIMING ADVANCE 0001	$0 \le \text{Timing Advance} < 0.125$	<u>chip</u>
TIMING ADVANCE 0002	<u>0.125 ≤ Timing Advance &lt; 0.25</u>	<u>chip</u>
<u></u>	<u></u>	<u></u>
TIMING ADVANCE 1024	<u>127.875≤ Timing Advance &lt; 128</u>	<u>chip</u>
<u></u>	<u></u>	<u></u>
TIMING_ADVANCE_2045	255.625 ≤ Timing Advance < 255.75	<u>chip</u>
TIMING ADVANCE 2046	255.75 ≤ Timing Advance < 255.875	<u>chip</u>
TIMING ADVANCE 2047	255.875 ≤ RX Timing Advance	<u>chip</u>

NOTE: This measurement can be used for timing advance (synchronisation shift) calculation for uplink synchronisation or location services.

R4-020670

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

	CR-Form-v5.1
	CHANGE REQUEST
¥	25.123 CR 206 <b># rev</b> - <sup># Current version: 5.0.0 <sup>#</sup></sup>
For <u>HELP</u> on us	ing this form, see bottom of this page or look at the pop-up text over the $#$ symbols.
Proposed change at	ifects: # (U)SIM ME/UE X Radio Access Network Core Network
Title: ೫	Correction of timing advance characteristics for 1.28 Mcps TDD option
Source: ೫	RAN WG4
Work item code: 🕷 🗧	LCRTDD-RF Date: # 17/5/2002
[	ARelease: %Rel-5Jse one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D (editorial modification)R99D (editorial modification)R99C (specific explanations of the above categories canREL-4D (release function)REL-5D (release function)REL-5
Reason for change:	<ul> <li># 1. Ambiguity exists in timing characteristics specification.</li> <li>2. Timing Advance mapping and accuracy requirement should be specified in section 9.</li> </ul>
Summary of change	<ul> <li>3 1. Correction of timing characteristics.</li> <li>2. T<sub>ADV</sub> mapping and accuracy requirement be deleted in section 7 and specified in section 9.</li> </ul>
Consequences if not approved:	* Not align with other specifications. Ambiguity remains in the specification. <u>Isolated Impact Analysis:</u> Does not affect implementations because it corrects a requirement where the specification was ambiguous or not sufficiently explicit.
Clauses affected:	<mark>ቼ 7; 9</mark>
Other specs affected:	%       Other core specifications       %         Test specifications       0&M Specifications
Other comments:	# Equivalent CRs in other Releases: CR205 cat. F to 25.123 v4.4.0

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

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

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

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

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

# 7 Timing characteristics

# 7.1 Timing Advance

# 7.1.1 3.84 Mcps TDD option

### 7.1.1.1 Introduction

The timing advance is initiated from UTRAN with an RRC message that implies an adjustement of the timing advance, see TS 25.331 section 8.6.6.26.

To update timing advance of a UE, the UTRAN measures RX Timing deviation. The measurements are defined in TS 25.225 and measurement accuracies are specified in section 9.

## 7.1.1.2 Requirements

#### 7.1.1.2.1 Timing Advance adjustment accuracy

The UE shall adjust the timing of its transmissions with an accuracy better than or equal to  $\pm 0.5$  chip to the signalled timing advance value.

### 7.1.1.2.2 Timing Advance adjustment delay

The UE shall adjust the timing of its transmission at the designated activation time, when the indicated activation time is later than  $D_{TA}$  msec from the end of the last TTI containing the RRC message implying an adjustement of the timing advance.

 $D_{TA}$  equals the RRC procedure delay of the RRC message implying an adjustement of the timing advance as defined in TS25.331 section 13.5.

# 7.1.2 1.28 Mcps TDD option

For 1.28 Mcps TDD the timing advance in the UE is adjusted by means of uplink synchronization. For the random access procedure the node B commands the UE to adjust its synchronisation shift by means of signalling the received position of the UpPTS in the FPACH. During the connection the node B measures the timing in the uplink and transmits a SS (Synchronization Shift) command to the UE at least once per sub-frame.

These SS commands determined whether the UE synchronization shift is either left unchanged, or adjusted 1 step up or 1 step down. The step size of the SS adjustment is (k/8)Tc where k (=1,2, ...,8) is signalled by higher layer signalling.

### 7.1.2.1 Uplink synchronization control requirements for UE for 1.28 Mcps TDD option

Uplink synchronization control is the ability of the UE transmitter to adjust its TX timing in accordance with one or more SS commands received in the downlink.

### 7.1.2.1.1 Uplink synchronization control steps

The SS step is the change in UE transmission timing in response to a single SS command, SS\_cmd, received by the UE.

#### 7.1.2.1.1.1 Minimum requirement

The UE transmitter shall have the capability of changing the transmission timing with a step size of 1/8, 2/8, 3/8, ..., 1 chip according to the value of  $\Delta_{SS}$ , within n=(1,2,...,14) time slots excluding special timeslots (DwPTS, GP, UpPTS) after the SS\_cmd arrived (closed loop). For the open loop any step being a multiple of 1/8 chip has to be allowed.

- a) The minimum transmission timing step  $\Delta_{SS,min}$  due to closed loop uplink synchronization control shall be within the range shown in Table 7.1.
- b) In case uplink synchronization control implies to perform a bigger step-larger adjustment than the minimum step the UE shall perform the a multiple integer number of the minimum steps m. Within the implementation grid of the applicable timing steps of the UE the step being closest to the required step should be executed.

#### Table 7.1: Uplink synchronisation control range

SS_cmd	Uplink synchronisation control range for minimum step 1/8 chip step size			
	Lower	Upper		
Up	1/9 chip <del>– 0.1 ppm</del>	1/7 chip <del>+ 0.1 ppm</del>		
Down	1/9 chip <del>– 0.1 ppm</del>	1/7 chip <del>+ 0.1 ppm</del>		

#### 7.1.2.1.2 Timing Advance (T<sub>ADV</sub>) for 1.28 Mcps TDD

This measurement refers to TS25.225 subsection 5.1.14.

7.1.2.1.2.1 Accuracy requirements

#### Table 7.2

Parameter	11		Conditions
	Unit	Accuracy	Range [chips]
Timing Advance	Chips period	<del>+/- 0.125</del>	<del>0,, 255.875</del>

7.1.2.1.2.2 Range/mapping

The reporting range for *Timing Advance* is from 0 ... 255.875 chips.

In table 7.3 the mapping of the measured quantity is defined. The signalling range may be larger than the guaranteed accuracy range.

#### Table 7.3

Reported value	Measured quantity value	Unit
TIMING_ADVANCE_0000	Timing Advance < 0	chip
TIMING_ADVANCE_0001	0 ≤ Timing Advance < 0.125	chip
TIMING_ADVANCE_0002	0.125 ≤ Timing Advance < 0.25	chip
	<del></del>	<del></del>
TIMING_ADVANCE_1024	127.875≤ Timing Advance < 128	<del>chip</del>
<del></del>	<del></del>	<del></del>
TIMING_ADVANCE_2045	255.625	chip
TIMING_ADVANCE_2046	<del>255.75 ≤ Timing Advance &lt; 255.875</del>	chip
TIMING_ADVANCE_2047	<del>255.875 ≤ RX Timing Advance</del>	chip

NOTE: This measurement can be used for timing advance (synchronisation shift) calculation for uplink synchronisation or location services.

### <Next Change>

# 9.1.2 Performance for UE Measurements in Uplink (TX)

The output power is defined as the average power of the transmit timeslot, and is measured with a filter that has a Root-Raised Cosine (RRC) filter response with a roll off  $\alpha = 0,22$  and a bandwidth equal to the chip rate.

## 9.1.2.1 UE transmitted power

The measurement period for CELL\_DCH state is 1 slot.

#### 9.1.2.1.1 Absolute accuracy requirements

#### Table 9.28 UE transmitted power absolute accuracy

Parameter		PUEMAX		
Faranieler	Unit	24dBm	21dBm	
UE transmitted power=PUEMAX	dB	+1/-3	±2	
UE transmitted power=PUEMAX-1	dB	+1,5/-3,5	±2,5	
UE transmitted power=PUEMAX-2	dB	+2/-4	±3	
UE transmitted power=PUEMAX-3	dB	+2,5/-4,5	±3,5	
PUEMAX-10≤UE transmitted power <puemax-3< td=""><td>dB</td><td>+3/-5</td><td>±4</td></puemax-3<>	dB	+3/-5	±4	

- Note 1: User equipment maximum output power, PUEMAX, is the maximum output power level without tolerance defined for the power class of the UE in 3GPP TS 25.102 "UTRA (UE) TDD; Radio Transmission and Reception".
- Note 2: UE transmitted power is the reported value.

### 9.1.2.1.2 Range/mapping

The reporting range for UE transmitted power is from -50 ...+34 dBm.

In table 9.29 mapping of the measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Reported value	Measured quantity value	Unit
UE_TX_POWER _021	$-50 \le UE$ transmitted power < -49	dBm
UE_TX_POWER _022	-49 ≤ UE transmitted power < -48	dBm
UE_TX_POWER _023	$-48 \le UE$ transmitted power < -47	dBm
UE_TX_POWER _102	$31 \leq UE$ transmitted power < 32	dBm
UE_TX_POWER _103	$32 \leq UE$ transmitted power < 33	dBm
UE_TX_POWER _104	$33 \le UE$ transmitted power < 34	dBm

#### Table 9.29

9.1.2.2 Timing Advance (T<sub>ADV</sub>) for 1.28 Mcps TDD

This measurement refers to TS25.225 subsection 5.1.14.

9.1.2.2.1 Accuracy requirements

#### Table 9.28A

Demonster	1114	•	Conditions
Parameter	<u>Unit</u>	Accuracy	Range [chips]
Timing Advance	Chips period	+/- 0.125	<u>0,, 255.875</u>

9.1.2.2.2 Range/mapping

The reporting range for Timing Advance is from 0 ... 255.875 chips.

In table 9.29A the mapping of the measured quantity is defined. The signalling range may be larger than the guaranteed accuracy range.

#### Table 9.29A

Reported value	Measured quantity value	Unit
TIMING ADVANCE 0000	Timing Advance < 0	<u>chip</u>
TIMING ADVANCE 0001	$0 \le \text{Timing Advance} < 0.125$	<u>chip</u>
TIMING ADVANCE 0002	<u>0.125 ≤ Timing Advance &lt; 0.25</u>	<u>chip</u>
<u></u>	<u></u>	<u></u>
TIMING ADVANCE 1024	<u>127.875≤ Timing Advance &lt; 128</u>	<u>chip</u>
<u></u>	<u></u>	<u></u>
TIMING_ADVANCE_2045	255.625 ≤ Timing Advance < 255.75	<u>chip</u>
TIMING ADVANCE 2046	255.75 ≤ Timing Advance < 255.875	<u>chip</u>
TIMING ADVANCE 2047	255.875 ≤ RX Timing Advance	<u>chip</u>

NOTE: This measurement can be used for timing advance (synchronisation shift) calculation for uplink synchronisation or location services.

R4-020671

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

	CR-Form-v5.1
	CHANGE REQUEST
ж	<b>25.123</b> CR <b>207 # rev</b> - <b>#</b> Current version: <b>4.4.0 #</b>
For <u>HELP</u> on us	sing this form, see bottom of this page or look at the pop-up text over the $\Re$ symbols.
Proposed change a	affects: # (U)SIM ME/UE X Radio Access Network Core Network
Title: ೫	Change of RF Channel Number for intra frequency in test parameter and remove square brackets
Source: ೫	RAN WG4
Work item code: #	LCRTDD-RF Date: # 17/5/2002
	FRelease: %Rel-4Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D (editorial modification)R99D tetailed explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5
Reason for change	• Most of the figures are still in square brackets in A.8.1.1.1.2; A.8.2.1.1.2;
	<ul> <li>A.8.3.1.1.2.</li> <li>The RF Channel Number of cell 2 is error in the test parameter of intra frequency reporting for 1.28Mcps TDD option in section A.8.</li> </ul>
Summary of chang	<ul> <li>e: # All square brackets in sections A.8.1.1.1.2; A.8.2.1.1.2; A.8.3.1.1.2 are removed.</li> <li>The RF Channel Number is changed from Channel 2 to Channel1.</li> <li><u>Isolated Impact Analysis:</u> The change would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.</li> </ul>
Consequences if not approved:	#   It may make error in the test.
Clauses affected:	# A.8.1.1.1.2; A.8.2.1.1.2; A.8.3.1.1.2
Other specs affected:	%       Other core specifications       %         X       Test specifications       34.122         O&M Specifications
Other comments:	ж

Equivalent CRs in other Releases: CR208 cat. A to 25.123 v5.0.0

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

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

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

## A.8.1.1.1.2 1.28 Mcps TDD option

This test will derive that the terminal makes correct reporting of an event Cell 1 is the active cell, Cell 2 is a neighbour cell on the used frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event" as illustrated in Figure A. 8.1A. General test parameters are given in the table A.8.1C below and they are signalled from test device. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used. P-CCPCH RSCP of the best cell has to be reported together with Event 1G reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts. The cell specific test parameters are given in Table A.8.1D below.

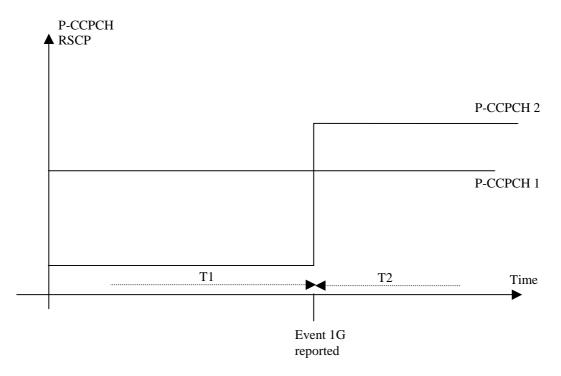


Figure A. 8.1A: Illustration of parameters for handover measurement reporting test case

# Table A.8.1C: General test parameters for correct reporting of intra frequency neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other
			timeslot than 0
Power Control		On	
Active cell		Cell 1	
Threshold used	dB	<del>[</del> -71 <del>]</del>	Absolute P-CCPCH RSCP threshold
frequency			for event 1G
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list		<del>[</del> 24 <del>]</del>	Measurement control information is
size			sent before T1 starts.
T1	S	10	
T2	S	10	

# Table A. 8.1D: Cell specific parameters for correct reporting of intra frequency neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Ce	ll 2		
Timeslot Number		0		0 DwPTS		0		DwPTS	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1			Chan	nel <del>2</del> 1	
PCCPCH_Ec/lor	DB	1	3			-:	3		
DwPCH_Ec/lor	DB		0					0	
$\hat{I}_{or}/I_{oc}$	DB	<del>[</del> 3 <del>]</del>	<del>[</del> 3 <del>]</del>			-Infinity	<del>[</del> 6 <del>]</del>		
I <sub>oc</sub>	dBm/1. 28 MHz				-	70			
PCCPCH_RSCP	dBm	<del>[</del> -70 <del>]</del>	<del>[</del> -70 <del>]</del>			-Infinity	<del>[</del> -67 <del>]</del>		
Propagation Condition		AWGN							

NOTE: The DPCH of all cells are located in a timeslot other than 0.

# <u>== NEXT CHANGED SECTION ==</u>

## A.8.2.1.1.2 1.28Mcps TDD option

1

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.

This test will derive that the terminal makes correct reporting of an event Cell 1 is the active cell, Cell 2 is a neighbour cell on the used frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event". General test parameters are given in the table A.8.2C below and they are signalled from test device. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell has to be reported together with Event 2C reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts.

The cell specific test parameters are shown in Table A.8.2D.

Parameter	Unit	Value	Comment				
DPCH parameters		DL Reference Measurement Channel	As specified in TS 25.102 section A.				
active cell		12.2 kbps	The DPCH is located in an other timeslot than 0				
Power Control		On					
Active cell		Cell 1					
Threshold non used frequency	dB	<del>[</del> -71 <del>]</del>	Absolute P-CCPCH RSCP threshold for event 2C				
Hysteresis	dB	0					
Time to Trigger	ms	0					
Filter coefficient		0					
Monitored cell list		[24] on channel 1	Measurement control information is				
size		[16] on channel 2	sent before T1 starts.				
T1	S	10					
T2	S	10					

#### Table A.8.2C: General test parameters for correct reporting of TDD inter frequency neighbours in AWGN propagation condition

# Table A.8.2D Cell Specific Parameters for Correct Reporting of Neighbours in AWGN Propagation Condition

Parameter	Unit		Ce	ll 1		Cell 2				
Timeslot Number		(	)	Dwf	PTS	(	)	DwPTS		
		T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nel 1		Channel 2				
PCCPCH_Ec/lor	DB	-	3			-:	3			
DwPCH_Ec/lor	DB			(	)			0		
$\hat{I}_{or}/I_{oc}$	DB	<del>[</del> 3 <del>]</del>	<del>[</del> 3 <del>]</del>			-Infinity	<del>[</del> 6 <del>]</del>			
I <sub>oc</sub>	dBm/1. 28 MHz	-70								
PCCPCH_RSCP	DBm	<del>[</del> -70 <del>]</del>	<del>[</del> -70 <del>]</del>			-Infinity	<del>[</del> -67 <del>]</del>			
Propagation Condition		AWGN								

NOTE: The DPCH of all cells are located in a timeslot other than 0.

# == NEXT CHANGED SECTION ==

## A.8.3.1.1.2 1.28 Mcps TDD option

1

1

This test will derive that the terminal makes correct reporting of an event. Cell 1 is current active cell, Cell 2 is a FDD cell. The power level of CPICH RSCP of cell 2 and the P-CCPCH RSCP of cell 1 is changed. General test parameters are given in the table A.8.3C below and they are signalled from test device. New measurement control information, which defines neighbour cells etc., is always sent before the handover starts. The test parameters are given in Table A.8.3D below.

# Table A.8.3C: General test parameters for Correct reporting of FDD neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment					
DPCH parameters		DL Reference Measurement Channel	As specified in TS 25.102 section A.					
active cell		12.2 kbps	The DPCH is located in an other timeslot than 0.					
Power Control		On						
Active cell		Cell 1						
Threshold non used	dB	-86	Absolute CPICH RSCP threshold for					
frequency			event 2C					
Hysteresis	dB	0						
W non-used		1	Applicable for event 2C					
frequency								
Time to Trigger	ms	0						
Filter coefficient		0						
Monitored cell list		24 on channel 1	Measurement control information is					
size		16 on channel 2	sent before T1 starts.					
T1	S	10						
T2	S	10						

Parameter	Unit		Ce	ll 1		Cell 2			
Timeslot Number		0		Dw	PTS	n.a	n.a.		
		T1 T2		T1	T2	T1	T2		
UTRA RF Channel Number		Channel 1				Channel 2			
CPICH_Ec/lor	dB	n.a. n.a.			a.	<del>[</del> -10 <del>]</del>	<del>[</del> -10 <del>]</del>		
PCCPCH_Ec/lor	dB	-3	-3			<del>[-</del> 12 <del>]</del>	<del>[</del> -12 <del>]</del>		
SCH_Ec/lor	dB					<del>[-</del> 12 <del>]</del>	<del>[</del> -12 <del>]</del>		
PICH_Ec/lor	dB					<del>[-</del> 15 <del>]</del>	<del>[</del> -15 <del>]</del>		
DwPCH_Ec/lor	dB			0	0	n.a.	n.a.		
OCNS	dB	[] []				<del>[</del> -0,941 <del>]</del>	<del>[</del> -0,941 <del>]</del>		
$\hat{I}_{or}/I_{oc}$	dB	<del>[-</del> 3 <del>]</del>	<del>[-</del> 3 <del>]</del>	<del>[-</del> 3 <del>]</del>	<del>[</del> 3 <del>-]</del>	<del>[</del> -Infinity <del>]</del>	<del>[-</del> -2 <del>]</del>		
I <sub>oc</sub>	dBm/3. 84 MHz		-7	70		-70			
CPICH_RSCP		n.a.				<del>[</del> -Infinity <del>]</del>	<del>[</del> -82 <del>]</del>		
PCCPCH_RSCP	dB	[-70 <del>]</del> [-70 <del>]</del>			n.a.	n.a.			
Propagation Condition		AWGN				AWGN			

# Table A. 8.3D Cell Specific parameters for Correct reporting of FDD neighbours in AWGNpropagation condition:

Note: The DPCH of cell 1 is located in a timeslot other than 0.

R4-020672

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

													CR-Form-v5.1
CHANGE REQUEST													
ж	25.	. <mark>123</mark>	CR	208		жrev	-	ж	Current	versi	ion:	<mark>5.0.0</mark>	) <sup>#</sup>
For <b>HELP</b> on using this form, see bottom of this page or look at the pop-up text over the <b>#</b> symbols.													
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network											Network		
Title: %			f RF C ackets		Numbe	er for intr	a free	quenc	cy in test	para	mete	r and re	move
Source: ೫	RA	N WG	4										
Work item code: %	LCF	RTDD-	RF						Date	e: X	17/	5/2002	
Category: ⊮	Use of the second secon	F (corr A (corr B (add C (fund D (edit iled exp	rection) respon lition of ctional torial m olanatic	ds to a co f feature), modificat odificatio	tion of f n) above	n in an ea			2	<u>ne</u> of t 6 7 8 9	the foi (GSN (Rele (Rele (Rele (Rele	<mark>-5</mark> llowing re 1 Phase 2 ase 1990 ase 1990 ase 1990 ase 4) ase 5)	2) 6) 7) 3)
<ul> <li>Reason for change: # Most of the figures are still in square brackets in A.8.1.1.1.2; A.8.2.1.1.2; A.8.3.1.1.2.</li> <li>The RF Channel Number of cell 2 is error in the test parameter of intra frequency reporting for 1.28Mcps TDD option in section A.8.</li> </ul>													
<ul> <li>Summary of change: # All square brackets in sections A.8.1.1.1.2; A.8.2.1.1.2; A.8.3.1.1.2 are removed.</li> <li>The RF Channel Number is changed from Channel 2 to Channel1.</li> <li>Isolated Impact Analysis:</li> <li>The change would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.</li> </ul>											the CR,		
Consequences if not approved:	ж												
Clauses affected:	ж	A.8.1	1.1.2	<mark>; A.8.2.1</mark>	.1.2; A	.8.3.1.1	2						
Other specs	ж	O	ther co	ore speci	ificatio	ns 🖁	ß						

## How to create CRs using this form:

ж

affected:

Other comments:

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Test specifications O&M Specifications

Equivalent CRs in other Releases: CR207 cat. F to 25.123 v4.4.0

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

### A.8.1.1.1.2 1.28 Mcps TDD option

This test will derive that the terminal makes correct reporting of an event Cell 1 is the active cell, Cell 2 is a neighbour cell on the used frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event" as illustrated in Figure A. 8.1A. General test parameters are given in the table A.8.1C below and they are signalled from test device. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used. P-CCPCH RSCP of the best cell has to be reported together with Event 1G reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts. The cell specific test parameters are given in Table A.8.1D below.

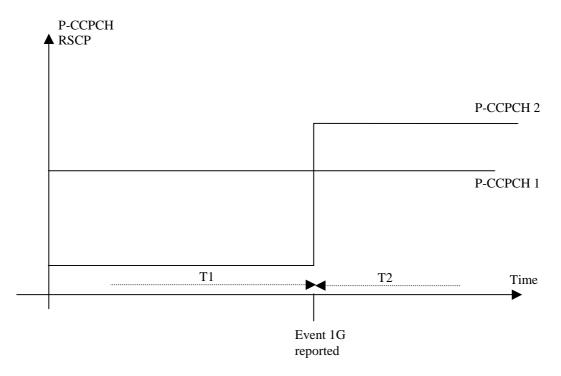


Figure A. 8.1A: Illustration of parameters for handover measurement reporting test case

# Table A.8.1C: General test parameters for correct reporting of intra frequency neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other
			timeslot than 0
Power Control		On	
Active cell		Cell 1	
Threshold used	dB	<del>[</del> -71 <del>]</del>	Absolute P-CCPCH RSCP threshold
frequency			for event 1G
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list		<del>[</del> 24 <del>]</del>	Measurement control information is
size			sent before T1 starts.
T1	S	10	
T2	S	10	

# Table A. 8.1D: Cell specific parameters for correct reporting of intra frequency neighbours in AWGN propagation condition

Parameter	Unit		Ce	ll 1			Ce	ll 2	
Timeslot Number		(	0		DwPTS		0		PTS
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1			Channel <del>2</del> 1		
PCCPCH_Ec/lor	DB	1	3			-:	3		
DwPCH_Ec/lor	DB			(	)			(	)
$\hat{I}_{or}/I_{oc}$	DB	<del>[</del> 3 <del>]</del>	<del>[</del> 3 <del>]</del>			-Infinity	<del>[</del> 6 <del>]</del>		
I <sub>oc</sub>	dBm/1. 28 MHz				-	70			
PCCPCH_RSCP	dBm	<del>[</del> -70 <del>]</del>	<del>[</del> -70 <del>]</del>			-Infinity	<del>[</del> -67 <del>]</del>		
Propagation Condition					AW	/GN			

NOTE: The DPCH of all cells are located in a timeslot other than 0.

## <u>== NEXT CHANGED SECTION ==</u>

### A.8.2.1.1.2 1.28Mcps TDD option

1

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.

This test will derive that the terminal makes correct reporting of an event Cell 1 is the active cell, Cell 2 is a neighbour cell on the used frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event". General test parameters are given in the table A.8.2C below and they are signalled from test device. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell has to be reported together with Event 2C reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts.

The cell specific test parameters are shown in Table A.8.2D.

Parameter	Unit	Value	Comment
DPCH parameters		DL Reference Measurement Channel	As specified in TS 25.102 section A.
active cell		12.2 kbps	The DPCH is located in an other timeslot than 0
Power Control		On	
Active cell		Cell 1	
Threshold non used frequency	dB	<del>[-</del> 71 <del>]</del>	Absolute P-CCPCH RSCP threshold for event 2C
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list		[24] on channel 1	Measurement control information is
size		[16] on channel 2	sent before T1 starts.
T1	S	10	
T2	S	10	

### Table A.8.2C: General test parameters for correct reporting of TDD inter frequency neighbours in AWGN propagation condition

# Table A.8.2D Cell Specific Parameters for Correct Reporting of Neighbours in AWGN Propagation Condition

Parameter	Unit		Ce	ll 1		Cell 2			
Timeslot Number		(	0		PTS	0		DwPTS	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1			Channel 2				
PCCPCH_Ec/lor	DB	-	-3			-3			
DwPCH_Ec/lor	DB			(	)			(	C
$\hat{I}_{or}/I_{oc}$	DB	<del>[</del> 3 <del>]</del>	<del>[</del> 3 <del>]</del>			-Infinity	<del>[</del> 6 <del>]</del>		
I <sub>oc</sub>	dBm/1. 28 MHz				-7	70			
PCCPCH_RSCP	DBm	<del>[</del> -70 <del>]</del>	<del>[</del> -70 <del>]</del>			-Infinity	<del>[</del> -67 <del>]</del>		
Propagation Condition		AWGN							

NOTE: The DPCH of all cells are located in a timeslot other than 0.

## == NEXT CHANGED SECTION ==

### A.8.3.1.1.2 1.28 Mcps TDD option

1

1

This test will derive that the terminal makes correct reporting of an event. Cell 1 is current active cell, Cell 2 is a FDD cell. The power level of CPICH RSCP of cell 2 and the P-CCPCH RSCP of cell 1 is changed. General test parameters are given in the table A.8.3C below and they are signalled from test device. New measurement control information, which defines neighbour cells etc., is always sent before the handover starts. The test parameters are given in Table A.8.3D below.

# Table A.8.3C: General test parameters for Correct reporting of FDD neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DPCH parameters		DL Reference Measurement Channel	As specified in TS 25.102 section A.
active cell		12.2 kbps	The DPCH is located in an other timeslot than 0.
Power Control		On	
Active cell		Cell 1	
Threshold non used	dB	-86	Absolute CPICH RSCP threshold for
frequency			event 2C
Hysteresis	dB	0	
W non-used		1	Applicable for event 2C
frequency			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list		24 on channel 1	Measurement control information is
size		16 on channel 2	sent before T1 starts.
T1	S	10	
T2	S	10	

Parameter	Unit	Cell 1				Ce	2
Timeslot Number		(	)	Dw	PTS	n.a	n.a.
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nel 1		Chan	nel 2
CPICH_Ec/lor	dB	n.	a.	n.	a.	<del>[</del> -10 <del>]</del>	<del>[</del> -10 <del>]</del>
PCCPCH_Ec/lor	dB	-3	-3			<del>[</del> -12 <del>]</del>	<del>[</del> -12 <del>]</del>
SCH_Ec/lor	dB					<del>[</del> -12 <del>]</del>	<del>[</del> -12 <del>]</del>
PICH_Ec/lor	dB					<del>[-</del> 15 <del>]</del>	<del>[</del> -15 <del>]</del>
DwPCH_Ec/lor	dB			0	0	n.a.	n.a.
OCNS	dB	[]	[]			<del>[</del> -0,941 <del>]</del>	<del>[</del> -0,941 <del>]</del>
$\hat{I}_{or}/I_{oc}$	dB	<del>[-</del> 3 <del>]</del>	<del>[-</del> 3 <del>]</del>	<del>[</del> -3 <del>]</del>	<del>[</del> 3 <del>-]</del>	<del>[-</del> Infinity <del>]</del>	<del>[-</del> -2 <del>]</del>
I <sub>oc</sub>	dBm/3. 84 MHz		-7	70		-7	70
CPICH_RSCP			n.	a.		-Infinity-	<del>[</del> -82 <del>]</del>
PCCPCH_RSCP	dB	<del>[</del> -70 <del>]</del>	<del>[</del> -70 <del>]</del>			n.a.	n.a.
Propagation Condition		AWGN				AW	GN

# Table A. 8.3D Cell Specific parameters for Correct reporting of FDD neighbours in AWGN<br/>propagation condition:

Note: The DPCH of cell 1 is located in a timeslot other than 0.

R4-020745

## 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

							CR-Form-v4		
		CHA	NGE RE	QUEST					
*	25.123	CR <mark>210</mark>	ж ev	/ <mark>-</mark> # C	Current vers	ion: <b>4.4.0</b>	ж		
For <u>HELP</u> on us	For <b>HELP</b> on using this form, see bottom of this page or look at the pop-up text over the <b>#</b> symbols.								
Proposed change a	Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network								
Title: ೫	Correction	to TDD/FDD	handover tes	case for 1.28	Mcps TDD	)			
Source: #	RAN WG	4							
Work item code: ℜ	LCRTDD-	RF			Date: ೫	17/5/2002			
Category: Ж	F (corr A (corr B (add C (fund D (edit Detailed exp	the following cat rection) responds to a co lition of feature), ctional modificatio torial modificatio planations of the 3GPP <u>TR 21.90</u>	prrection in an e tion of feature) n) above categor	earlier release)	2 R96 R97 R98 R99 REL-4	Rel-4 the following relea (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)	ases:		
Reason for change	: ¥ TDD	to FDD hando	ver test case	is missing for	1,28 Mcps	TDD option			
Summary of chang	e: # Intro	duction of TDD	/FDD handov	er test case					
Consequences if not approved:	¥ TDD,	/FDD handove	r core require	ment cannot b	be tested.				
Clauses affected:	策 A.5.2	0.0							
Other specs affected:	₩ Ot X Te	her core speci est specificatio &M Specificatio	ns	₩ 34.122					
Other comments:	¥ Equiv	valent CRs in o	other Release	s: CR211 cat.	A to 25.12	3 v5.0.0			

### How to create CRs using this form:

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

## A.5.2 TDD/FDD Handover

## A.5.2.1 3.84 Mcps TDD option

### A.5.2.1.1 Test purpose and Environment

The purpose of this test is to verify the requirement for the TDD/FDD handover delay in CELL\_DCH state reported in section 5.2.2.1.

The test parameters are given in Table A.5.2.1, A.5.2.2 and A.5.2.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G and 2B shall be used. The CPICH\_RSCP of the best cell on the unused frequency shall be reported together with Event 2B 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].

Para	meter	Unit	Value	Comment
DCH pa	DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power	Control		On	
	lity value on CH	BLER	0.01	
Initial	Active cell		Cell 1	TDD cell
conditions	Neighbour cell		Cell 2	FDD cell
Final condition	Active cell		Cell 2	FDD cell
H	CS		Not used	
(	0		0	Cell individual offset. This value shall be used for all cells in the test.
Hyste	eresis	dB	3	Hysteresis parameter for event 2B
Time to	Trigger	ms	0	
	reshold used Jency	dBm	-71	Applicable for Event 2B
Threshold	I non-used Jency	dBm	-80	Applicable for Event 2B
W used f	requency		1	Applicable for Event 2B
	d frequency		1	Applicable for Event 2B
Filter co	pefficient		0	
Monitored	nitored cell list size		6 TDD neighbours on Channel 1 6 FDD neighbours on Channel 2	
Т	SI	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.5.2.1: General test parameters for TDD/FDD handover

Parameter	Unit		Cell 1						
DL timeslot number		0 2							
		T1 T2 T3 T1 T2 T3							
UTRA RF Channel Number				Chan	nel 1				
PCCPCH_Ec/lor	dB		-3			n.a.			
SCH_Ec/lor	dB		-9			n.a.			
SCH_t <sub>offset</sub>	dB		0			n.a.			
DPCH_Ec/lor	dB		n.a.		Not	te 1	n.a.		
OCNS_Ec/lor	dB		-3,12		Not	te 2	n.a.		
$\hat{I}_{or}/I_{oc}$	dB	5	-	1	5	-	1		
PCCPCH RSCP	dBm	-68	-7	'4		n.a.			
I <sub>oc</sub>	dBm/ 3,84 MHz			-7	D				
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 .									

Table A.5.2.2: Cell 1 specific test parameters for TDD/FDD handover

Table A.5.2.3: Cell 2 specific test parameters for TDD/FDD handover

Parameter	Unit	Cell	2
		T1, T2	Т3
CPICH_Ec/lor	dB	-1(	)
PCCPCH_Ec/lor	dB	-12	2
SCH_Ec/lor	dB	-12	2
PICH_Ec/lor	dB	-15	5
DPCH_Ec/lor	dB	n.a.	Note 1
OCNS_Ec/lor	dB	-0.941	Note 2
CPICH_RSCP	dBm	-83	-77
$\hat{I}_{or}/I_{oc}$	dB	-3	3
I <sub>oc</sub>	dBm/3. 84 MHz	-70	)
Propagation Condition		AWC	GN
Note 1: The DPCH level is			
Note 2: The power of the			II make the total
power from the ce	ell to be equ	ual to I <sub>or</sub>	

### A.5.2.1.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than [130] 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 1.28 Mcps TDD option

Void

### A.5.2.2.1 Test purpose and Environment

The purpose of this test is to verify the requirement for the TDD/FDD handover delay in CELL\_DCH state reported in section 5.2.2.2.

The test parameters are given in Table A.5.2.1A, A.5.2.2A and A.5.2.3A below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G and 2B shall be used. The CPICH RSCP of the best cell on the unused frequency shall be reported together with Event 2B 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 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.5.2.1A: General test parameters for TDD/FDD handover

Parar	neter	Unit	Value	Comment
DCH par	ameters		DL Reference Measurement	As specified in TS 25.102 section A
			Channel 12.2 kbps	
Power			On	
Initial	Active cell		<u>Cell 1</u>	TDD cell
conditions	<u>Neighbour</u>		<u>Cell 2</u>	FDD cell
	<u>cell</u>			
<u>Final</u>	Active cell		<u>Cell 2</u>	FDD cell
condition				
<u>c</u>	<u>)</u>	<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be
				used for all cells in the test.
<u>Hyste</u>		<u>dB</u>	<u>3</u>	Hysteresis parameter for event 2B
Time to	<u>Trigger</u>	<u>ms</u>	<u>0</u>	
Absolute thr	<u>eshold used</u>	<u>dBm</u>	<u>-71</u>	Applicable for Event 2B
frequ	ency			
Threshold	non-used	<u>dBm</u>	<u>-80</u>	Applicable for Event 2B
frequ	ency			
W non-used	<u>d frequency</u>		<u>1</u>	Applicable for Event 2B
Filter co	<u>efficient</u>		<u>0</u>	
Monitored of	<u>cell list size</u>		<u>6 TDD neighbours on Channel 1</u>	
			<u>6 FDD neighbours on Channel 2</u>	
<u>T<sub>SI</sub></u>		<u>s</u>	<u>1.28</u>	The value shall be used for all cells in the
				test.
<u>T</u>	1	<u>S</u>	<u>5</u>	
<u>T</u>	2	<u>S</u>	<u>15</u>	
T	3	<u>s</u>	<u>5</u>	

### Table A.5.2.2A: Cell 1 specific test parameters for TDD/FDD handover

Parameter	Unit			Cel	11			
Timeslot number		0				<u>5</u>		
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	
UTRA RF Channel				Chanı	nol 1			
<u>Number</u>				Gilani				
PCCPCH_Ec/lor	dB		<u>-3</u>			<u>n.a.</u>		
DPCH_Ec/lor	dB		<u>n.a.</u>		Not	t <u>e 1</u>	<u>n.a.</u>	
OCNS_Ec/lor	dB		<u>-3</u>		Not	te <u>2</u>	<u>n.a.</u>	
$\hat{I}_{or}/I_{oc}$	dB	<u>5</u>	<u>-1</u>		<u>5</u>		<u>-1</u>	
PCCPCH RSCP	dBm	-68	-74			<u>n.a.</u>		
	<u>dBm/</u> <u>1.28</u> <u>MHz</u>			<u>-7(</u>	<u>0</u>			
Propagation Condition		AWGN						
Note 2: The power of the to be equal to lor		hannel tha	t is added sl	hall make	the total p	ower fron	n the cell	

Parameter	Unit	Cell 2				
		<u>T1</u>	<u>T3</u>			
CPICH_Ec/lor	dB	<u>-10</u>				
PCCPCH_Ec/lor	dB		<u>-12</u>			
SCH_Ec/lor	dB		<u>-12</u>			
PICH_Ec/lor	dB		<u>-15</u>			
DPCH_Ec/lor	dB	<u>n.a.</u>		Note 1		
OCNS_Ec/lor	dB	-0.9	-0.941			
CPICH_RSCP	<u>dBm</u>	<u>-Inf</u>		7 <u>5</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>-Inf</u>	4	<u>5</u>		
I <sub>oc</sub>	<u>dBm/3.</u> 84 MHz	-70				
Propagation Condition		AWGN				
Note 1: The DPCH level is	Note 1: The DPCH level is controlled by the power control loop					
Note 2 : The power of the	OCNS cha	nnel that is ad	ded shall mak	the total		
power from the ce	ell to be equ	<u>ual to l</u>				

### Table A.5.2.3A: Cell 2 specific test parameters for TDD/FDD handover

### A.5.2.1.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 130 ms from the beginning of time period T3.

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

R4-020746

## 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

		CR-Form-v4
	CHANGE REQUEST	
*	<b>25.123</b> CR <b>211 #</b> ev <b>_ #</b> Current	t version: <b>5.0.0</b> <sup>#</sup>
For <u>HELP</u> on us	sing this form, see bottom of this page or look at the pop-up	text over the # symbols.
Proposed change a	affects: ೫ (U)SIM ME/UE X Radio Access Ne	etwork Core Network
Title: ೫	Correction to TDD/FDD handover test case for 1.28 Mcps	TDD
Source: #	RAN WG4	
Work item code: ℜ	LCRTDD-RF Dat	te:
Reason for change	Use one of the following categories:Use one ofF (correction)2A (corresponds to a correction in an earlier release)R9B (addition of feature),R9C (functional modification of feature)R9D (editorial modification)R9Detailed explanations of the above categories canRE	7 (Release 1997) 8 (Release 1998) 9 (Release 1999) EL-4 (Release 4) EL-5 (Release 5)
Consequences if not approved:	<ul> <li>* TDD/FDD handover core requirement cannot be test</li> </ul>	ed.
Clauses affected:	¥ A.5.2.2	
Other specs affected:	<ul> <li>* A.3.2.2</li> <li>* Other core specifications</li> <li>* Test specifications</li> <li>O&amp;M Specifications</li> <li>34.122</li> </ul>	
Other comments:	# Equivalent CRs in other Releases: CR210 cat. F to 2	25.123 v4.4.0

### How to create CRs using this form:

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

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

## A.5.2 TDD/FDD Handover

## A.5.2.1 3.84 Mcps TDD option

### A.5.2.1.1 Test purpose and Environment

The purpose of this test is to verify the requirement for the TDD/FDD handover delay in CELL\_DCH state reported in section 5.2.2.1.

The test parameters are given in Table A.5.2.1, A.5.2.2 and A.5.2.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G and 2B shall be used. The CPICH\_RSCP of the best cell on the unused frequency shall be reported together with Event 2B 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].

Para	Parameter		Value	Comment				
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2				
Power	Control		On					
	Target quality value on DTCH		0.01					
Initial	Active cell		Cell 1	TDD cell				
conditions	Neighbour cell		Cell 2	FDD cell				
Final condition	Active cell		Cell 2	FDD cell				
H	CS		Not used					
(	0		0	Cell individual offset. This value shall be used for all cells in the test.				
Hyste	eresis	dB	3	Hysteresis parameter for event 2B				
Time to	Trigger	ms	0					
	reshold used Jency	dBm	-71	Applicable for Event 2B				
Threshold	Threshold non-used frequency		-80	Applicable for Event 2B				
W used f	requency		1	Applicable for Event 2B				
	d frequency		1	Applicable for Event 2B				
Filter co	ter coefficient		0					
Monitored	Monitored cell list size		Nonitored cell list size				6 TDD neighbours on Channel 1 6 FDD 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.5.2.1: General test parameters for TDD/FDD handover

Parameter	Unit	Cell 1						
DL timeslot number			0			2		
		T1	T1 T2 T3			T2	T3	
UTRA RF Channel				Chanı	nel 1			
Number								
PCCPCH_Ec/lor	dB		-3			n.a.		
SCH_Ec/lor	dB		-9			n.a.		
SCH_t <sub>offset</sub>	dB	0 n.a.						
DPCH_Ec/lor	dB		n.a.		Not	ie 1	n.a.	
OCNS_Ec/lor	dB		-3,12		Note 2 n.		n.a.	
$\hat{I}_{or}/I_{oc}$	dB	5	-	1	5	-	1	
PCCPCH RSCP	dBm	-68	-7	'4		n.a.		
	dBm/							
$I_{oc}$	3,84	-70						
	MHz							
Propagation Condition		AWGN						
Note 1: The DPCH level	is control	led by the	power cont	rol loop				
Note 2: The power of the	OCNS c	hannel that	t is added s	shall make	the total p	ower from	the cell	
to be equal to lor	· .				•			

Table A.5.2.2: Cell 1 specific test parameters for TDD/FDD handover

Table A.5.2.3: Cell 2 specific test parameters for TDD/FDD handover

Parameter	Unit	Cell	2			
		T1, T2	Т3			
CPICH_Ec/lor	dB	-10				
PCCPCH_Ec/lor	dB	-12	2			
SCH_Ec/lor	dB	-12	2			
PICH_Ec/lor	dB	-15	5			
DPCH_Ec/lor	dB	n.a. Note 1				
OCNS_Ec/lor	dB	-0.941	Note 2			
CPICH_RSCP	dBm	-83	-77			
$\hat{I}_{or}/I_{oc}$	dB	-3	3			
I <sub>oc</sub>	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	Note 2: The power of the OCNS channel that is added shall make the total					
power from the ce	ell to be equ	ual to I <sub>or</sub>				

### A.5.2.1.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than [130] 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 1.28 Mcps TDD option

Void

### A.5.2.2.1 Test purpose and Environment

The purpose of this test is to verify the requirement for the TDD/FDD handover delay in CELL\_DCH state reported in section 5.2.2.2.

The test parameters are given in Table A.5.2.1A, A.5.2.2A and A.5.2.3A below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G and 2B shall be used. The CPICH RSCP of the best cell on the unused frequency shall be reported together with Event 2B 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 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.5.2.1A: General test parameters for TDD/FDD handover

Parar	Parameter		Value	Comment		
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A		
Power	Control		On			
Initial	Active cell		Cell 1	TDD cell		
conditions	<u>Neighbour</u> <u>cell</u>		<u>Cell 2</u>	FDD cell		
<u>Final</u> condition	Active cell		<u>Cell 2</u>	FDD cell		
<u>(</u>	<u>)</u>	<u>dB</u> <u>0</u>		Cell individual offset. This value shall be used for all cells in the test.		
Hyste	eresis	<u>dB</u>	<u>3</u>	Hysteresis parameter for event 2B		
Time to	<u>Trigger</u>	<u>ms</u>	<u>0</u>			
Absolute thr frequ	<u>eshold used</u> lency	<u>dBm</u>	<u>-71</u>	Applicable for Event 2B		
Threshold	old non-used dBm -80 guency		<u>-80</u>	Applicable for Event 2B		
	on-used frequency		<u>1</u>	Applicable for Event 2B		
Filter co	Filter coefficient		<u>0</u>			
Monitored	Monitored cell list size		Aonitored cell list size		<u>6 TDD neighbours on Channel 1</u> <u>6 FDD neighbours on Channel 2</u>	
<u>Tsi</u>		<u>T<sub>SI</sub> s 1.28</u>		The value shall be used for all cells in the test.		
<u> </u>		<u>S</u>	<u>5</u>			
	2	<u>s</u>	<u>15</u>			
<u> </u>	3	<u>s</u>	<u>5</u>			

### Table A.5.2.2A: Cell 1 specific test parameters for TDD/FDD handover

Parameter	Unit		<u>Cell 1</u>						
Timeslot number		<u>0</u>			<u>5</u>				
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>		
<u>UTRA RF Channel</u> Number		<u>Channel 1</u>							
PCCPCH_Ec/lor	<u>dB</u>		<u>-3</u>			<u>n.a.</u>			
DPCH_Ec/lor	dB		<u>n.a.</u>		Not	t <u>e 1</u>	<u>n.a.</u>		
OCNS_Ec/lor	<u>dB</u>		<u>-3</u>		Note 2		<u>n.a.</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>5</u>	<u>-1</u>	<u>l</u>	<u>5</u>		<u>-1</u>		
PCCPCH RSCP	dBm	-68	-74			n.a.			
I <sub>oc</sub>	<u>dBm/</u> <u>1.28</u> <u>MHz</u>	-70							
Propagation Condition				AWO	<u>GN</u>				
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 .									

Parameter	Unit	Cell 2					
		<u>T1</u>	<u>T3</u>				
CPICH_Ec/lor	<u>dB</u>	<u>-10</u>					
PCCPCH_Ec/lor	dB		<u>-12</u>				
SCH_Ec/lor	dB		<u>-12</u>				
PICH_Ec/lor	dB		<u>-15</u>				
DPCH_Ec/lor	dB	n.a. Note 1					
OCNS_Ec/lor	dB	-0.9	941	Note 2			
CPICH_RSCP	dBm	<u>-Inf</u>	-	75			
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>-Inf</u>		<u>5</u>			
I <sub>oc</sub>	<u>dBm/3.</u> 84 MHz		<u>-70</u>				
Propagation Condition		AWGN					
Note 1: The DPCH level is	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 ce	ell to be equ	ual to I					

### Table A.5.2.3A: Cell 2 specific test parameters for TDD/FDD handover

### A.5.2.1.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 130 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 TDD/GSM Handover

NOTE: This section is included for consistency with numbering with section 5 currently no test covering requirements in sections 5.3.2.1 and 5.3.2.2 exists.

R4-020747

## 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

	CR-Form-v4								
ж	<b>25.123</b> CR 212 <sup>#</sup> ev - <sup>#</sup> Current version: <b>4.4.0</b> <sup>#</sup>								
For <u>HELP</u> on us	ing this form, see bottom of this page or look at the pop-up text over the $\Re$ symbols.								
Proposed change a	Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network								
Title: ೫	Correction of cell reselection in idle mode test case for 1,28 Mcps TDD option								
Source: ೫	RAN WG4								
Work item code: ₩	LCRTDD-RF Date: # 17/5/2002								
Reason for change:	F       Release: %       Rel-4         Use one of the following categories:       Use one of the following releases:       2         F (correction)       2       (GSM Phase 2)         A (corresponds to a correction in an earlier release)       R96       (Release 1996)         B (addition of feature),       R97       (Release 1997)         C (functional modification of feature)       R98       (Release 1998)         D (editorial modification)       R99       (Release 1999)         Detailed explanations of the above categories can       REL-4       (Release 4)         be found in 3GPP TR 21.900.       REL-5       (Release 5)         %       The current re-selection delay value of the test case is not inline with the minimum requirement that can be derived from the core requirements.       Wrong section numbering.         %: %       The measurement time for GSM is included in the test requirement. The DRX cycle length is included in the formulas and the re-selection delay is updated accordingly.         Section numbering is corrected.       Section numbering is corrected.								
Consequences if not approved:	Image: Second state       Second state         Isolated Impact Analysis: This CR has no impact on current implementations because it only corrects a test case.								
Clauses affected:	# A.4.2.4.2.2, A.4.2.4.4 (new)								
Other specs affected:	%       Other core specifications       %         Test specifications       0&M Specifications								
Other comments:	# Equivalent CRs in other Releases: CR213 cat. A to 25.123 v5.0.0								

### How to create CRs using this form:

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

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

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

### A.4.2.4.2.2 1.28 Mpcs TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send LOCATION UPDATING REQUEST message to perform a Location update.

The cell re-selection delay shall be less than  $\underline{84}$  s + T<sub>BCCH</sub> where T<sub>BCCH</sub> is the maximum time allowed to read BCCH data from GSM cell [20].

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

NOTE: The cell re-selection delay can be expressed as:  $3*Max(3*T_{measure TDD}, T_{measure GSM} + 1DRX) + T_{BCCH}$ , where:

T<sub>measureTDD</sub> Specified in 4.2.2.7.2 Table 4.1A.

DRX cycle length 1.28s see Table A.4.7.A

T<sub>BCCH</sub> Maximum time allowed to read BCCH data from GSM cell [20].

This gives a total of  $\underline{7.683.84}s + T_{BCCH}$ , thus allow  $\underline{84}s + T_{BCCH}$ .

### A.4.2.4.3 Scenario 4A Test Purpose and Environment

- A.4.2.4.3.1 void
- A.4.2.4.3.2 1.28 Mcps TDD option

This test is to verify the requirement for the UTRAN to GSM cell re-selection delay reported in section 4.2.

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. Test parameters are given in Table A.4.10A, A.4.11A, A.4.12A.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. Cell 1 and cell 2 shall belong to different location areas.

#### Table A.4.10A: General test parameters for UTRAN (1.28 Mcps TDD OPTION) to GSM Cell Reselection

Parameter		Unit	Value	Comment
Initial condition Active cell			Cell1	
Neighbour cell			Cell2	
Final condition	Final condition Active cell		Cell2	
DRX o	DRX cycle length		1,28	
T1		S	25	
T2		S	45	

Parameter	Unit	Cell 1 (UTRA)			
Timeslot Number		0		Dw	PTS
		T1 T2		T1	T2
UTRA RF Channel Number		Chan	nel 1	Char	nnel 1
PCCPCH_Ec/lor	dB	-3	-3		
DwPCH_Ec/lor	dB			0	0
$\hat{I}_{or}/I_{oc}$	dB	6	6	6	6
I <sub>oc</sub>	dBm/1. 28 MHz	-80			
PCCPCH RSCP	dBm	-77	-77		
Propagation Condition		AW	'GN	AW	/GN
Treselection	S			0	
Ssearch <sub>RAT</sub>	dB	Not sent			
Qrxlevmin	dBm	-103			
Qoffset1 <sub>s,n</sub>	dB	C1, C2: 0			
Qhyst1 <sub>s</sub>	dB		(	)	

### Table A.4 11A: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 2 (GSM)			
	Unit	T1	T2		
Absolute RF Channel Number		ARFCN 1			
RXLEV	dBm	-90	-70		
RXLEV_ACCESS_MIN	dBm	-104			
MS_TXPWR_MAX_CCH	dBm	33			

### A.4.2.4.<u>4</u>3 Scenario 4A Requirements

A.4.2.4.<u>4</u>3.1 void

### A.4.2.4.<u>43</u>.2 1.28 Mpcs TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send RR Channel Request message for location update to Cell 2.

The cell re-selection delay shall be less than 26 s+  $T_{BCCH}$ , where  $T_{BCCH}$  is the maximum time allowed to read BCCH data from GSM cell [20].

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

NOTE: The UE shall keep a running average of 4 measurements, thus gives  $4 \text{ * } T_{\text{measureGSM}} + T_{\text{BCCH}}$ , where:

T<sub>measureGSM</sub> Specified in 4.2.2.7.2 Table 4.1A.

T<sub>BCCH</sub> Maximum time allowed to read BCCH data from GSM cell [20].

This gives a total of 25.6s +T<sub>BCCH</sub>, thus allow 26s +T<sub>BCCH</sub>.

R4-020748

## 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

	CR-Form-v4
¥	<b>25.123</b> CR <b>213 *</b> ev <b>- *</b> Current version: <b>5.0.0 *</b>
For <u>HELP</u> on us	ing this form, see bottom of this page or look at the pop-up text over the $#$ symbols.
Proposed change a	ffects: 郑 (U)SIM ME/UE X Radio Access Network Core Network
Title: ೫	Correction of cell reselection in idle mode test case for 1,28 Mcps TDD option
Source: ೫	RAN WG4
Work item code: ₩	LCRTDD-RF Date: # 17/5/2002
	Use one of the following categories:       Use one of the following releases:         F (correction)       2       (GSM Phase 2)         A (corresponds to a correction in an earlier release)       R96       (Release 1996)         B (addition of feature),       R97       (Release 1997)         C (functional modification of feature)       R98       (Release 1998)         D (editorial modification)       R99       (Release 1999)         Detailed explanations of the above categories can       REL-4       (Release 4)         be found in 3GPP TR 21.900.       REL-5       (Release 5)
Reason for change:	The current re-selection delay value of the test case is not inline with the minimum requirement that can be derived from the core requirements. Wrong section numbering.
Summary of change	E: # The measurement time for GSM is included in the test requirement. The DRX cycle length is included in the formulas and the re-selection delay is updated accordingly. Section numbering is corrected.
Consequences if not approved:	Image: Second system       Image: Second system         Image: Second
Clauses affected:	器 A.4.2.4.2.2, A.4.2.4.4 (new)
Other specs affected:	#       Other core specifications       #         Test specifications       O&M Specifications
Other comments:	# Equivalent CRs in other Releases: CR212 cat. F to 25.123 v4.4.0

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### A.4.2.4.2.2 1.28 Mpcs TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send LOCATION UPDATING REQUEST message to perform a Location update.

The cell re-selection delay shall be less than  $4\underline{8}$  s + T<sub>BCCH</sub> where T<sub>BCCH</sub> is the maximum time allowed to read BCCH data from GSM cell [20].

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

NOTE: The cell re-selection delay can be expressed as:  $Max(3*T_{measure TDD}, T_{measure GSM} + 1DRX) + T_{BCCH}$ , where:

T<sub>measureTDD</sub> Specified in 4.2.2.7.2 Table 4.1A.

DRX cycle length 1.28s see Table A.4.7.A

T<sub>BCCH</sub> Maximum time allowed to read BCCH data from GSM cell [20].

This gives a total of 7.683.84s +T<sub>BCCH</sub>, thus allow 84s +T<sub>BCCH</sub>.

### A.4.2.4.3 Scenario 4A Test Purpose and Environment

A.4.2.4.3.1 void

### A.4.2.4.3.2 1.28 Mcps TDD option

This test is to verify the requirement for the UTRAN to GSM cell re-selection delay reported in section 4.2.

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. Test parameters are given in Table A.4.10A, A.4.11A, A.4.12A.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. Cell 1 and cell 2 shall belong to different location areas.

### Table A.4.10A: General test parameters for UTRAN (1.28 Mcps TDD OPTION) to GSM Cell Reselection

Pa	Parameter		Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
DRX (	cycle length	S	1,28	
	T1		25	
	T2	S	45	

Parameter	Unit	Cell 1 (UTRA)						
Timeslot Number		C	)	Dw	PTS			
		T1	T2	T1	T2			
UTRA RF Channel Number		Chan	nel 1	Char	nnel 1			
PCCPCH_Ec/lor	dB	-3	-3					
DwPCH_Ec/lor	dB			0	0			
$\hat{I}_{or}/I_{oc}$	dB	6	6	6	6			
I <sub>oc</sub>	dBm/1. 28 MHz	-80						
PCCPCH RSCP	dBm	-77	-77					
Propagation Condition		AW	'GN	AW	/GN			
Treselection	S			0				
Ssearch <sub>RAT</sub>	dB	Not sent						
Qrxlevmin	dBm	-103						
Qoffset1 <sub>s,n</sub>	dB	C1, C2: 0						
Qhyst1 <sub>s</sub>	dB		(	)				

### Table A.4 11A: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 2 (GSM)			
	Unit	T1	T2		
Absolute RF Channel Number		ARFCN 1			
RXLEV	dBm	-90	-70		
RXLEV_ACCESS_MIN	dBm	-104			
MS_TXPWR_MAX_CCH	dBm	33			

### A.4.2.4.<u>4</u>3 Scenario 4A Requirements

A.4.2.4.<u>4</u>3.1 void

### A.4.2.4.<u>43</u>.2 1.28 Mpcs TDD option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send RR Channel Request message for location update to Cell 2.

The cell re-selection delay shall be less than 26 s+  $T_{BCCH}$ , where  $T_{BCCH}$  is the maximum time allowed to read BCCH data from GSM cell [20].

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

NOTE: The UE shall keep a running average of 4 measurements, thus gives  $4 \text{ * } T_{\text{measureGSM}} + T_{\text{BCCH}}$ , where:

T<sub>measureGSM</sub> Specified in 4.2.2.7.2 Table 4.1A.

T<sub>BCCH</sub> Maximum time allowed to read BCCH data from GSM cell [20].

This gives a total of 25.6s +T<sub>BCCH</sub>, thus allow 26s +T<sub>BCCH</sub>.

R4-020971

## 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

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Proposed change	affect	ts: #	(U)	SIM	ME	UE X	Rad	lio Ac	cess Ne	tworl	k	Core N	etwork
Title: ដ	Cor	rection	n to IS	CP meas	surem	ent and	relate	d tes	t cases fo	<mark>or 1.</mark> :	28 Mo	cps TDD	
Source: ೫	RA	N WG	4										
Work item code: ℜ	LCF	RTDD-	RF						Date	<b>е:</b> Ж	17/	5/2002	
Category: #	%       F       Release: %       Rel-4         Use one of the following categories:       Ise one of the following releases:       2       (GSM Phase 2)         A (corresponds to a correction in an earlier release)       R96       (Release 1996)         B (addition of feature),       R97       (Release 1997)         C (functional modification of feature)       R98       (Release 1998)         D (editorial modification)       R99       (Release 1999)         Detailed explanations of the above categories can be found in 3GPP TR 21.900.       REL-4       (Release 4)									ntain any capability. se of DCA the basis and 6.2 on			
Summary of chang	ge: Ж	CELI	DCH		LL_F							oability in on P-CC	
Consequences if not approved:	ж	capa meas <u>Isola</u> the e perfo	bility a surement ted im xisting ormand	ent result pact state specific	iplete. ts. <u>ement</u> ation v ver, in	This wil <u>: Correc</u> will not a correct	l lead tion o ffect l interp	to in f req UE in retati	consister uirement nplement on may i	nt pe s. Co tatior	rform orrect	interpret	ation of
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Other specs	ж	O	her co	ore specif	icatior	າຣ ສ	£						

affected:	>	Test specifications O&M Specifications	34.122
Other comments:	ж <mark>—</mark>	Equivalent CRs in other Releases:	CR217r1 cat. A to 25.123 v5.0.0

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## 6 Dynamic channel allocation Void

## 6.1 Introduction

6.1.1 3.84 Mcps TDD option

<del>Void</del>

### 6.1.2 1.28 Mcps TDD option

The channel assignment algorithm will be implemented on network side in the RNC. It will be distributed, interference adapted approach where each base station makes the channel assignment based on local signal strength measurements performed in the UE and the Node B. A priori knowledge about the used channels of the other base stations in the vicinity can be implicitly used without additional signalling traffic.

## 6.2 Implementation requirements

### 6.2.1 3.84 Mcps TDD option

<del>Void</del>

### 6.2.2 1.28 Mcps TDD option

The purpose of DCA is on one side the limitation of the interference (keeping required QoS) and on the other side to maximise the system capacity due to minimising reuse distance. The details on channel assignment policy are given in [12].

## 6.3 Number of timeslots to be measured

### 6.3.1 3.84 Mcps TDD option

Void

### 6.3.2 1.28 Mcps TDD option

The number of down link timeslots to be measured in the UE is broadcasted on the BCH in each cell. In general, the number of downlink timeslots in question will be less than [6], but in worst case the UE shall be capable to measure [6] downlink timeslots. In case of "simple UE [FFS] timeslots shall at least be measured.

## 6.4 Measurement reporting delay

### 6.4.1 3.84 Mcps TDD option

<del>Void</del>

1.28 Mcps TDD optionIn order to save battery life time, in idle mode no measurements are performed for DCA. ISCP measurements are started at call establishment. Taking into account that the measured interference of the timeslots is

preferable averaged over [FFS] frames, the measurement reporting delay in connecting phase shall not exceed [FFS] milliseconds.

## <NEXT CHANGED SECTION>

### 8.1A.2.2 TDD intra frequency measurements

During the CELL\_DCH state the UE shall continuously measure identified intra frequency cells and search for new intra frequency cells in the monitoring set. In case the network requests the UE to report detected set cells, the UE shall also search for intra frequency cells outside the monitored and active set. Cells, which are neither included in the active set nor in the monitored set, and are identified by the UE belong to the detected set according to TS 25.331 Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not used for inter frequency measurements.

#### 8.1A.2.2.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify TDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

A cell shall be considered detectable when P-CCPCH Ec/Io  $\geq$  -8 dB and DwPCH\_Ec/Io  $\geq$  -5 dB. When L3 filtering is used an additional delay can be expected.

The UE shall be able to identify a new detectable cell not belonging to the monitored set within

$$T_{identify detected set} = 30s$$

when P-CCPCH Ec/Io  $\geq$  -8 dB, DwPCH\_Ec/Io  $\geq$  -5 dB. When L3 filtering is used an additional delay can be expected.

### 8.1A.2.2.2 UE P-CCPCH <u>RSCP</u> measurement capability

In the CELL\_DCH state the measurement period for intra frequency <u>P-CCPCH RSCP</u> measurements is 200 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing P-CCPCH <u>RSCP</u> measurements for 6 identified intra-frequency cells of the monitored set and the UE physical layer shall be capable of reporting <u>these</u> measurements to higher layers with the measurement period of 200 ms. When inter-frequency measurements are required by the network, the UE shall be capable of performing P-CCPCH<u>RSCP</u> measurements for at least  $Y_{measurement}$ intra cells, where  $Y_{measurement intra}$  is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the section 9. If the UE has identified more than  $Y_{measurement intra}$  cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH<u>RSCP</u> measurements of cells from UE physical layer to higher layers may be decreased.

$$Y_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement TDD}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

 $X_{\text{basic measurement TDD}} = 6 \text{ (cells)}$ 

 $T_{\text{Measurement}\_Period, Intra} = 200 \text{ ms.}$  The measurement period for Intra frequency P-CCPCH <u>RSCP</u> measurements.

T<sub>Intra</sub>:

This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing. It is assumed for the requirement that the slot allocation allows measurement windows to be of minimum duration necessary to perform the measurements.

 $T_{\text{basic_identify_TDD, intra}} = 800 \text{ ms.}$  This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new TDD cell is defined. (side conditions are defined in subclause 8.1A.2.6).

The UE shall furthermore be capable of performing P-CCPCH measurements for at least 1 detected intra-frequency cell, in the detected set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 10 s. The measurement accuracy for all measured cells shall be as specified in the section 9.

#### 6

### 8.1A.2.2.2A Timeslot ISCP measurement capability

In the CELL\_DCH state the measurement period for intra frequency Timeslot ISCP measurements on arbitrary DL timeslots, including Beacon timeslots is 400 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing Timeslot ISCP measurements for a total of 5 different combinations of an arbitrary DL timeslot and an intra-frequency cell [16], including the current serving cell. The UE physical layer shall be capable of reporting Timeslot ISCP measurements to higher layers with the measurement period of 400 ms.

When inter-frequency measurements are required by the network, the UE shall be able to perform Timeslot ISCP measurements for at least  $Y_{measurement intra ISCP}$  different combinations, where  $Y_{measurement intra ISCP}$  is defined in the following equation. Any Timeslot ISCP measurement that could not be performed during that measurement period, shall be measured in the following measurement periods. The measurement accuracy of the Timeslot ISCP measurement shall be as specified in the section 9.

$$\underline{Y}_{\text{measurement intra ISCP}} = Floor \left\{ X_{\text{basic measurement ISCP}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra, ISCP}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

 $X_{\text{basic measurement ISCP}} = 5$  (combinations of an arbitrary DL timeslot and an intra-frequency cell)

- $T_{Measurement\_Period, Intra, ISCP} = 400 \text{ ms.}$  The measurement period for Intra frequency Timeslot ISCP measurements.
- <u>T<sub>Intra</sub>: This is the minimum time (representing a time corresponding to an integer number of full slots) that is</u> available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing.

### 8.1A.2.2.3 Periodic Reporting

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

### 8.1A.2.2.4 Event-triggered Periodic Reporting

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

The first report in event triggered periodic measurement reporting shall meet the requirements specified in section 8.1A.2.2.5 Event Triggered Reporting.

### 8.1A.2.2.5 Event Triggered Reporting

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

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

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

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering shall be less than T  $_{identify intra}$  defined in Section 8.1A.2.2.1.

If a cell belonging to monitored set has been detectable at least for the time period  $T_{identify\_intra}$  and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than  $T_{Measurement\_Period Intra}$  when the L3 filter has not been used and the UE P-CCPCH measurement capabilities of Section 8.1A.2.2.2 are valid.

The event triggered measurement reporting delay on cells not belonging to monitored set, measured without L3 filtering, shall be less than the above defined T  $_{identify detected set}$  defined in Section 8.1A.2.2.1.

#### 7

### 8.1A.2.3 TDD inter frequency measurements

When signalled by the network during CELL\_DCH state, the UE shall continuously measure identified inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

#### 8.1A.2.3.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$\mathbf{T}_{\text{identify inter}} = Max \left\{ 5000, \mathbf{T}_{\text{basic identify TDD,inter}} \cdot \frac{\mathbf{T}_{\text{Measurement Period, Inter}}}{\mathbf{T}_{\text{Inter}}} \cdot N_{Freq} \right\} ms$$

A cell shall be considered detectable when P-CCPCH Ec/Io  $\geq$  -8 dB and DwPCH\_Ec/Io  $\geq$  -5 dB. When L3 filtering is used an additional delay can be expected.

### 8.1A.2.3.2 UE P-CCPCH <u>RSCP</u> measurement capability

When TDD inter frequency measurements are scheduled, the UE physical layer shall be capable of reporting <u>P-CCPCH</u> <u>RSCP</u> measurements to higher layers with measurement accuracy as specified in section 9 and with measurement period given by

$$T_{\text{measurement inter}} = Max \left\{ T_{\text{Measurement Period, Inter}}, T_{\text{basic measurement TDD inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter}}} \cdot N_{Freq} \right\} ms$$

In case of a dual receiver UE, the measurement period for inter frequency <u>P-CCPCH RSCP</u> measurements is 480 ms.

The UE shall be capable of performing P-CCPCH <u>RSCP</u> measurements for  $X_{\text{basic measurement TDD inter}}$  inter-frequency cells per TDD frequency of the monitored set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of  $T_{\text{Measurement_Inter}}$ .

#### $X_{\text{basic measurement TDDinter}} = 6$

 $T_{Measurement\_Period Inter} = 480 \text{ ms.}$  The period used for calculating the measurement period  $T_{measurement\_inter}$  for inter frequency P-CCPCH <u>RSCP</u> measurements.

- T<sub>Inter:</sub> This is the minimum time available for inter frequency measurements during the period T<sub>Measurement\_Period inter</sub> with an arbitrarily chosen timing. The minimum time depends on the channel allocation and is calculated by assuming [2\*0.1] ms for implementation margin (for the description of the idle intervals see Annex A of 25.225). It is assumed for the requirement that the slot allocation allows measurement windows in the idle periods to be of minimum duration necessary to perform the measurements.
- $T_{basic\_identify\_TDD,inter} = 800$ ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new TDD cell is defined. (side conditions are defined in subclause 8.1A.2.6).
- $T_{\text{basic\_measurement\_TDD inter}} = 50 \text{ ms.}$  This is the time period used in the equation for defining the measurement period for inter frequency P-CCPCH <u>RSCP</u> measurements.

N<sub>Freq</sub> Number of TDD frequencies indicated in the inter frequency measurement control information.

#### 8.1A.2.3.3 Periodic Reporting

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

### 8.1A.2.3.4 Event Triggered Reporting

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

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

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

The event triggered measurement reporting delay, measured without L3 filtering shall be less than T  $_{identify inter}$  defined in Section 8.1A.2.3.1. When L3 filtering is used an additional delay can be expected.

### <NEXT CHANGED SECTION>

## 8.4A Measurements in CELL\_FACH State (1.28 Mcps option)

### 8.4A.1 Introduction

This section contains requirements on the UE regarding measurement reporting in CELL\_FACH state. The measurements are defined in TS 25.225, the measurement model is defined in TS 25.302 and measurement accuracies are specified in section 9. Control of measurement reporting is specified in TS 25.331 and parallel measurements are specified in section 8.2. For the description of the idle intervals see TS 25.225, Annex A.

### 8.4A.2 Requirements

### 8.4A.2.1 UE Measurement Capability

The UE shall be able to monitor up to

- 32 intra frequency TDD cells, and
- 32 inter frequency cells, including
  - TDD cells distributed on up to [x] additional TDD carriers and
  - Depending on UE capability, FDD cells, distributed on up to 3 FDD carriers and
- Depending on UE capability 32 GSM cells distributed on up to 32 GSM carriers.

The requirements in section 9 on P-CCPCH RSCP measurements are applicable for a UE performing measurements according to this section. For inter-frequency FDD, TDD and GSM cell re-selection, measurement occasions as specified in TS 25.331 and, in addition, idle intervals as described in TS 25.225 are used to find and measure on these cells.

It is defined below how the measurements on different systems and modes are performed given the time allocated to that system. The time during the measurement occasions and idle intervals that is allocated to each of the different modes and systems shall be equally shared by the modes which the UE has capability for and that are in the monitored set signalled by the network.

The UE is required to measure periodically once every time period  $T_{meas}$  on each of the modes and systems, FDD interfrequency cells, TDD interfrequency cells and GSM carriers, for which the corresponding parameter  $N_{FDD}$ ,  $N_{TDD}$  and  $N_{GSM}$  is set to 1, within the measurement time  $T_{meas}$ 

$$T_{meas} = \left[ \left( N_{FDD} + N_{TDD} + N_{GSM} \right) \cdot N_{TTI} \cdot \mathbf{M}_{REP} \cdot 10 \right] \mathrm{ms}$$

where the following parameters are defined:

$N_{TDD}$	= 0 or 1. If there are inter-frequency TDD cells in the neighbour list $N_{TDD}$ =1, otherwise $N_{TDD}$ =0.
N <sub>FDD</sub>	= 0 or 1. If the UE is capable of FDD and there are FDD cells in the neighbour list $N_{FDD}=1$ otherwise $N_{FDD}=0$ .
N <sub>GSM</sub>	= 0 or 1. If the UE is capable of GSM and there are GSM cells in the neighbour list, $N_{GSM}=1$ , otherwise $N_{GSM}=0$ .
M_REP	is the Measurement Occasion cycle length in number of frames as specified in TS 25.331.
N <sub>TTI</sub>	is the number of frames in each measurement occasion, equal to the length of the largest TTI on the SCCPCH monitored by the UE.

### 8.4A.2.2 TDD intra frequency measurements

During the CELL\_FACH state the UE shall continuously measure identified intra frequency cells and search for new intra frequency cells in the monitoring set. Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not used for inter frequency measurements.

#### 8.4A.2.2.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify TDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

A cell shall be considered detectable when P-CCPCH Ec/Io  $\geq$  -8 dB, DwPCH\_Ec/Io  $\geq$  -5 dB.

### 8.4A.2.2.2 UE P-CCPCH <u>RSCP</u> measurement capability

In the CELL\_FACH state the measurement period for intra frequency <u>P-CCPCH RSCP</u> measurements is 200 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing P-CCPCH <u>RSCP</u> measurements for 6 identified intra-frequency cells of the monitored set and the UE physical layer shall be capable of reporting <u>these</u> measurements to higher layers with the measurement period of 200 ms. When inter-frequency measurements are required by the network, the UE shall be capable of performing P-CCPCH <u>RSCP</u> measurements for at least Y<sub>measurement</sub> intra cells , where Y<sub>measurement intra</sub> is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the section 9. If the UE has identified more than Y<sub>measurement intra</sub> cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH <u>RSCP</u> measurements of cells from UE physical layer to higher layers may be decreased.

$$Y_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement TDD}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

X<sub>basic measurement TDD</sub> is specified in section 8.1A.2.2.2

T<sub>Measurement\_Period, Intra</sub> is specified in section 8.1A.2.2.2

T<sub>Intra</sub>: is specified in section 8.1A.2.2.2

T<sub>basic\_identify\_TDD, intra</sub> is specified in section 8.1A.2.2.2

### 8.4A.2.2.2A Timeslot ISCP measurement capability

In the CELL FACH state the measurement period for intra frequency Timeslot ISCP measurements on arbitrary DL timeslots, including Beacon timeslots is 400 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing Timeslot ISCP measurements on the current serving cell for 5 arbitrary DL timeslots. The UE physical layer shall be capable of reporting Timeslot ISCP measurements to higher layers with the measurement period of 400 ms.

When inter-frequency measurements are required by the network, the UE shall be able to perform Timeslot ISCP measurements on the current serving for at least  $Y_{measurement intra ISCP}$  arbitrary DL timeslots, where  $Y_{measurement intra ISCP}$  is defined in the following equation. Any Timeslot ISCP measurement that could not be performed during that measurement period, shall be measured in the following measurement periods. The measurement accuracy of the Timeslot ISCP measurement shall be as specified in the section 9.

$$Y_{\text{measurement intra ISCP}} = Floor \left\{ X_{\text{basic measurement ISCP}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra, ISCP}}} \right\}$$

whereby function Floor(x) takes the integer part of x,

<u> $X_{\text{basic measurement ISCP}} = 5$  (arbitrary DL timeslots of the current serving cell)</u>

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T<sub>Measurement\_Period, Intra, ISCP</sub> is specified in section 8.1A.2.2.2A,

T<sub>Intra</sub> is specified in section 8.1A.2.2.2A.

### 8.4A.2.2.3 RACH Reporting

Reported measurements in the measurement reports sent on the RACH shall meet the requirements in section 9.

### 8.4A.2.3 TDD inter frequency measurements

When signalled by the network during CELL\_FACH state, the UE shall continuously measure identified inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

#### 8.4A.2.3.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify inter}} = Max \left\{ 5000, T_{\text{basic identify TDD,inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter FACH}}} \cdot N_{Freq} \right\} ms$$

A cell shall be considered detectable when P-CCPCH Ec/Io  $\geq$  -8 dB, DwPCH\_Ec/Io  $\geq$  -5 dB.

### 8.4A.2.3.2 UE P-CCPCH <u>RSCP</u> measurement capability

When TDD inter frequency measurements are scheduled, the UE physical layer shall be capable of reporting <u>P-CCPCH</u> <u>RSCP</u> measurements to higher layers with measurement accuracy as specified in section 9 with measurement period given by

$$\mathbf{T}_{\text{measurement inter}} = Max \left\{ \mathbf{T}_{\text{Measurement Period, Inter}}, \mathbf{T}_{\text{basic measurement TDD inter}} \cdot \frac{\mathbf{T}_{\text{Measurement Period, Inter}}}{\mathbf{T}_{\text{Inter FACH}}} \cdot N_{Freq} \right\} ms$$

where

T<sub>Measurement\_Period Inter</sub> is specified in section 8.1A.2.3.2

T Inter FACH: This is the minimum time that is available for the inter frequency <u>P-CCPCH RSCP</u> measurements during the period T<sub>Measurement\_Period inter with an arbitrarily chosen timing. The minimum time depends on the channel allocation and on measurement occasions during CELL\_FACH state and is calculated by assuming [2\*0.1] ms for implementation margin (for the description of the idle intervals see Annex A of 25.225 and for definition of measurement occasions during CELL\_FACH state given by M\_REP and TTI see TS 25.331). It is assumed for the requirement that the slot allocation allows measurement windows in the idle periods to be of minimum duration necessary to perform the measurements. During the measurement occasions for CELL\_FACH state the UE shall measure primarily cells that can not be measured in the idle intervalls.</sub>

T<sub>basic\_identify\_TDD,inter</sub> is specified in section 8.1A.2.3.2

 $T_{basic\_measurement\_TDD inter}$  is specified in section 8.1A.2.3.2

N<sub>Freq</sub> is specified in section 8.1A.2.3.2

If the UE does not need measurement occasions to perform inter-frequency measurements, the measurement period for inter frequency measurements is 480ms.

The UE shall be capable of performing P-CCPCH measurements for  $X_{\text{basic measurement TDD inter}}$  inter-frequency cells per TDD frequency of the monitored set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of  $T_{\text{Measurement_Inter.}}$ 

 $X_{\text{basic measurement TDDinter}}$  is defined in section 8.1A.2.3.2.

### <NEXT CHANGED SECTION>

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# A.8.1.2 Event 1H and 1I triggered reporting in AWGN propagation conditions

### A.8.1.2.1 3.84 Mcps TDD option

### A.8.1.2.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of event 1H and event 1I. This test will partly verify the requirements in section 8.1.2 and section 9.1.

The test parameters are given in Table A.8.1.2, Table A.8.1.2A and Table A.8.1.2B below. The test consists of five successive time periods, with a time duration of T1, T2, T3, T4 and T5 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

In the measurement control information it shall be indicated to the UE that event-triggered reporting with event 1H and event 1I shall be used and that Timeslot ISCP and P-CCPCH RSCP shall be reported together with event 1H and 1I. Measurement control information shall be sent to the UE before the beginning of time period T1.

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 10. In addition, timeslots 3 and 4 shall be allocated as DL timeslots. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

Parameter		Unit	Value	Comment			
DCH paramete	ers		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2			
Power Contro			On				
Target quality DTCH	value on	BLER	0.01				
Initial	Active cell		Cell 1				
conditions	Neighbour cell		Cell 2				
Final condition	Active cell		Cell 1				
HCS			Not used				
0	dB		0	Cell individual offset. This value shall be used for all cells in the test.			
Timeslot list co	ell 1		2, 3, 4	Timeslot numbers in IE "Cell info" for Cell			
Timeslot list ce	ell 2		4	Timeslot numbers in IE "Cell info" for Cell 2			
Threshold use	ed frequency	dBm	-68	Threshold 1 applicable for event 1H, cell 1 timeslots 2, 4 and cell 2 timeslot 4			
Threshold use	ed frequency	dBm	-73	Threshold 2 applicable for event 1H, cell 1 timeslots 2, 3, 4 and cell 2 timeslot 4			
Threshold use	shold used frequency dBm		-67	Applicable for event 1I, cell 1 timeslots 2, 4 and cell 2 timeslot 4			
Hysteresis		dB	0				
Time to Trigge	er	ms	0				
Filter coefficie	nt		0				
Monitored cell	list size		6 TDD neighbours on Channel 1	Cell 2 shall belong to the monitored set			
T1		S	5				
T2		S	5				
T3		S	5				
T4		S	5				
T5		S	5				

# Table A.8.1.2: General test parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit	Cell 1										
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5	
UTRA RF Channel						Char	nol 1					
Number			Channel 1									
DL timeslot number			0 2									
PCCPCH_Ec/lor	dB			-3					n.a.			
SCH_Ec/lor	dB			-9					n.a.			
SCH_t <sub>offset</sub>	dB			5					n.a.			
DPCH_Ec/lor	dB			n.a.					Note 1			
OCNS_Ec/lor	dB			-3,12					Note 2			
$\hat{I}_{or}/I_{oc}$	dB			4					4			
PCCPCH RSCP	dBm			-69					n.a.			
I <sub>oc</sub>	dBm / 3,84 MHz	-70										
Propagation Condition						AW	/GN					
DL timeslot number				3					4			
PCCPCH_Ec/lor	dB			n.a.			n.a.					
SCH_Ec/lor	dB			n.a.					n.a.			
SCH_t <sub>offset</sub>	dB			n.a.					n.a.			
DPCH_Ec/lor	dB			n.a.					n.a.			
OCNS_Ec/lor	dB			0					0			
$\hat{I}_{or}/I_{oc}$	dB			3					0		6	
PCCPCH RSCP	dBm			n.a.					n.a.			
I <sub>oc</sub>	dBm / 3,84 MHz	-70										
Propagation Condition						AW	/GN					
Note 1: The DPCH level	is controlled b	y the po	ower con	trol loop								
Note 2: The power of the	OCNS chann	el that	is added	shall ma	ake the to	otal powe	r from t	he cell to	o be equa	l to lor		

# Table A.8.1.2A: Cell 1 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition

# Table A.8.1.2B: Cell 2 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit		Cell 2								
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRA RF Channel			Channel 1								
Number											
DL timeslot number			0 2								
PCCPCH_Ec/lor	dB			-3					n.a.		
SCH_Ec/lor	dB			-9					n.a.		
SCH_t <sub>offset</sub>	dB			10					n.a.		
DPCH_Ec/lor	dB			n.a.					n.a.		
OCNS_Ec/lor	dB			-3,12					0		
$\hat{I}_{or}/I_{oc}$	dB		1					6		0	
PCCPCH RSCP	dBm			-72					n.a.		
I <sub>oc</sub>	dBm /					-7	70				
	3,84 MHz					A1A					
Propagation Condition DL timeslot number				3		AW	/GN		4		
	dB										
PCCPCH_Ec/lor				n.a.					n.a.		
SCH_Ec/lor	dB			n.a.					n.a.		
SCH_t <sub>offset</sub>	dB			n.a.					n.a.		
DPCH_Ec/lor	dB			n.a.					n.a.		
OCNS_Ec/lor	dB			0					0		
$\hat{I}_{or}/I_{oc}$	dB			3				6		(	C
PCCPCH RSCP	dBm			n.a.					n.a.		
I	dBm /					-	70				
I <sub>oc</sub>	3,84 MHz		-70								
Propagation Condition						AW	/GN				

## A.8.1.2.1.2 Test Requirements

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T2.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T3.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T4.

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T5.

The UE shall not send event 1H or 1I triggered measurement reports, as long as the reporting criteria are not fulfilled.

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

## A.8.1.2.2 1.28 Mcps TDD option

<del>Void</del>

#### A.8.1.2.2.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of event 1H and event 1I. This test will partly verify the requirements in section 8.1A.2 and section 9.1.

The test parameters are given in Table A.8.1.2C, Table A.8.1.2D and Table A.8.1.2E below. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

In the measurement control information it shall be indicated to the UE that event-triggered reporting with event 1H and event 1I shall be used and that Timeslot ISCP and P-CCPCH RSCP shall be reported together with event 1H and 1I. Measurement control information shall be sent to the UE before the beginning of time period T1.

The UL DPCH shall be transmitted in timeslot 2. In addition, timeslots 5 and 6 shall be allocated as DL timeslots.

			<u>condition</u>	
Paran	neter	Unit	Value	Comment
DCH paramete	ers active cell		DL Reference Measurement	As specified in TS 25.102 section A.
			Channel 12.2 kbps	
Power Control			On	
Target quality	<u>value on</u>	<u>BLER</u>	<u>0.01</u>	
Initial	Active cell		<u>Cell 1</u>	
conditions	<u>Neighbour</u> cell		<u>Cell 2</u>	
Final condition	Active cell		<u>Cell 1</u>	
<u>0</u>		<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be used for all cells in the test.
Timeslot list ce	<u>   1</u>		<u>5, 6</u>	Timeslot numbers in IE "Cell info" for Cell 1
Timeslot list ce	<u>ll 2</u>		<u>6</u>	Timeslot numbers in IE "Cell info" for Cell 2
Threshold used	d frequency	<u>dBm</u>	<u>-68</u>	Applicable for event 1H, cell 1 timeslots 5, <u>6 and cell 2 timeslot 6</u>
Threshold used	<u>d frequency</u>	<u>dBm</u>	<u>-66</u>	Applicable for event 11, cell 1 timeslots 5, 6 and cell 2 timeslot 6
<b>Hysteresis</b>		<u>dB</u>	<u>0</u>	
Time to Trigge		<u>ms</u>	<u>0</u>	
Filter coefficier	nt		<u>0</u>	
Monitored cell	list size		<u>6 TDD neighbours on Channel 1</u>	Cell 2 shall belong to the monitored set
<u>T1</u>		<u>s</u>	<u>5</u>	
<u>T2</u>		<u>s</u>	<u>5</u>	
<u>T3</u>		<u>s</u>	<u>5</u>	
<u>T4</u>		<u>S</u>	<u>5</u>	

# Table A.8.1.2C: General test parameters for correct event 1H and 1I reporting in AWGN propagation condition

# Table A.8.1.2D: Cell 1 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit						Cell 1						
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>
<u>UTRA RF Channel</u> Number						<u>(</u>	Channe	11				-	
DL timeslot number				<u>0</u>				<u>5</u>			6	<u>6</u>	
PCCPCH_Ec/lor	<u>dB</u>			<u>-3</u>									
DPCH_Ec/lor	<u>dB</u>						No	te 1					
OCNS_Ec/lor	<u>dB</u>			<u>-3</u>			No	te 2			(	)	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>			<u>4</u>				<u>3</u>		<u>0</u>	<u>6</u>	<u>}</u>	<u>0</u>
PCCPCH RSCP	<u>dBm</u>			<u>-69</u>			<u>n</u>	<u>.a.</u>			<u>n.</u>	<u>a.</u>	
I <sub>oc</sub>	<u>dBm /</u> 1.28 MHz		<u>-70</u>										

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

Table A.8.1.2E: Cell 2 specific test parameters for correct event 1H and 1I reporting in AWGN

Parameter	<u>Unit</u>		<u>Ce</u>	<u>ll 2</u>					
		<u>T1 T2 </u>	<u>T3 T4</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>		
UTRA RF Channel			Char	nnel 1					
Number									
DL timeslot number		<u>0</u>			<u>6</u>				
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>							
DPCH_Ec/lor	<u>dB</u>								
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>			<u>0</u>				
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>4</u>		<u>6</u>		9	<u>0</u>		
PCCPCH RSCP	dBm	-69			n.a				
I <sub>oc</sub>	<u>dBm /</u> <u>1.28 MHz</u>	-70							

## propagation condition

## A.8.1.2.2.2 Test Requirements

The UE shall send one event 11 triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T2.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T3.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T4.

The UE shall not send event 1H or 1I triggered measurement reports, as long as the reporting criteria are not fulfilled.

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

R4-020972

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

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affected:		<ul> <li>Test specifications</li> <li>O&amp;M Specifications</li> </ul>	34.122
Other comments:	ж	Equivalent CRs in other Releases:	CR216r1 cat. F to 25.123 v4.4.0

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

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

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

# 6 Dynamic channel allocation Void

# 6.1 Introduction

6.1.1 3.84 Mcps TDD option

<del>Void</del>

# 6.1.2 1.28 Mcps TDD option

The channel assignment algorithm will be implemented on network side in the RNC. It will be distributed, interference adapted approach where each base station makes the channel assignment based on local signal strength measurements performed in the UE and the Node B. A priori knowledge about the used channels of the other base stations in the vicinity can be implicitly used without additional signalling traffic.

# 6.2 Implementation requirements

# 6.2.1 3.84 Mcps TDD option

<del>Void</del>

# 6.2.2 1.28 Mcps TDD option

The purpose of DCA is on one side the limitation of the interference (keeping required QoS) and on the other side to maximise the system capacity due to minimising reuse distance. The details on channel assignment policy are given in [12].

# 6.3 Number of timeslots to be measured

# 6.3.1 3.84 Mcps TDD option

Void

# 6.3.2 1.28 Mcps TDD option

The number of down link timeslots to be measured in the UE is broadcasted on the BCH in each cell. In general, the number of downlink timeslots in question will be less than [6], but in worst case the UE shall be capable to measure [6] downlink timeslots. In case of "simple UE [FFS] timeslots shall at least be measured.

# 6.4 Measurement reporting delay

# 6.4.1 3.84 Mcps TDD option

<del>Void</del>

1.28 Mcps TDD optionIn order to save battery life time, in idle mode no measurements are performed for DCA. ISCP measurements are started at call establishment. Taking into account that the measured interference of the timeslots is

preferable averaged over [FFS] frames, the measurement reporting delay in connecting phase shall not exceed [FFS] milliseconds.

# <NEXT CHANGED SECTION>

#### 8.1A.2.2 TDD intra frequency measurements

During the CELL\_DCH state the UE shall continuously measure identified intra frequency cells and search for new intra frequency cells in the monitoring set. In case the network requests the UE to report detected set cells, the UE shall also search for intra frequency cells outside the monitored and active set. Cells, which are neither included in the active set nor in the monitored set, and are identified by the UE belong to the detected set according to TS 25.331 Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not used for inter frequency measurements.

#### 8.1A.2.2.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify TDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

A cell shall be considered detectable when P-CCPCH Ec/Io  $\geq$  -8 dB and DwPCH\_Ec/Io  $\geq$  -5 dB. When L3 filtering is used an additional delay can be expected.

The UE shall be able to identify a new detectable cell not belonging to the monitored set within

$$T_{identify detected set} = 30s$$

when P-CCPCH Ec/Io  $\geq$  -8 dB, DwPCH\_Ec/Io  $\geq$  -5 dB. When L3 filtering is used an additional delay can be expected.

#### 8.1A.2.2.2 UE P-CCPCH <u>RSCP</u> measurement capability

In the CELL\_DCH state the measurement period for intra frequency <u>P-CCPCH RSCP</u> measurements is 200 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing P-CCPCH <u>RSCP</u> measurements for 6 identified intra-frequency cells of the monitored set and the UE physical layer shall be capable of reporting <u>these</u> measurements to higher layers with the measurement period of 200 ms. When inter-frequency measurements are required by the network, the UE shall be capable of performing P-CCPCH<u>RSCP</u> measurements for at least  $Y_{measurement}$ intra cells, where  $Y_{measurement intra}$  is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the section 9. If the UE has identified more than  $Y_{measurement intra}$  cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH<u>RSCP</u> measurements of cells from UE physical layer to higher layers may be decreased.

$$Y_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement TDD}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

 $X_{\text{basic measurement TDD}} = 6 \text{ (cells)}$ 

 $T_{\text{Measurement}\_Period, Intra} = 200 \text{ ms.}$  The measurement period for Intra frequency P-CCPCH <u>RSCP</u> measurements.

T<sub>Intra</sub>:

This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing. It is assumed for the requirement that the slot allocation allows measurement windows to be of minimum duration necessary to perform the measurements.

 $T_{\text{basic_identify_TDD, intra}} = 800 \text{ ms.}$  This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new TDD cell is defined. (side conditions are defined in subclause 8.1A.2.6).

The UE shall furthermore be capable of performing P-CCPCH measurements for at least 1 detected intra-frequency cell, in the detected set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 10 s. The measurement accuracy for all measured cells shall be as specified in the section 9.

### 8.1A.2.2.2A Timeslot ISCP measurement capability

In the CELL\_DCH state the measurement period for intra frequency Timeslot ISCP measurements on arbitrary DL timeslots, including Beacon timeslots is 400 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing Timeslot ISCP measurements for a total of 5 different combinations of an arbitrary DL timeslot and an intra-frequency cell [16], including the current serving cell. The UE physical layer shall be capable of reporting Timeslot ISCP measurements to higher layers with the measurement period of 400 ms.

When inter-frequency measurements are required by the network, the UE shall be able to perform Timeslot ISCP measurements for at least  $Y_{measurement intra ISCP}$  different combinations, where  $Y_{measurement intra ISCP}$  is defined in the following equation. Any Timeslot ISCP measurement that could not be performed during that measurement period, shall be measured in the following measurement periods. The measurement accuracy of the Timeslot ISCP measurement shall be as specified in the section 9.

$$\underline{Y}_{\text{measurement intra ISCP}} = Floor \left\{ X_{\text{basic measurement ISCP}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra, ISCP}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

 $X_{\text{basic measurement ISCP}} = 5$  (combinations of an arbitrary DL timeslot and an intra-frequency cell)

- $T_{Measurement\_Period, Intra, ISCP} = 400 \text{ ms.}$  The measurement period for Intra frequency Timeslot ISCP measurements.
- <u>T<sub>Intra</sub>: This is the minimum time (representing a time corresponding to an integer number of full slots) that is</u> available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing.

#### 8.1A.2.2.3 Periodic Reporting

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

#### 8.1A.2.2.4 Event-triggered Periodic Reporting

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

The first report in event triggered periodic measurement reporting shall meet the requirements specified in section 8.1A.2.2.5 Event Triggered Reporting.

#### 8.1A.2.2.5 Event Triggered Reporting

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

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

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

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering shall be less than T  $_{identify intra}$  defined in Section 8.1A.2.2.1.

If a cell belonging to monitored set has been detectable at least for the time period  $T_{identify\_intra}$  and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than  $T_{Measurement\_Period Intra}$  when the L3 filter has not been used and the UE P-CCPCH measurement capabilities of Section 8.1A.2.2.2 are valid.

The event triggered measurement reporting delay on cells not belonging to monitored set, measured without L3 filtering, shall be less than the above defined T  $_{identify detected set}$  defined in Section 8.1A.2.2.1.

#### 8.1A.2.3 TDD inter frequency measurements

When signalled by the network during CELL\_DCH state, the UE shall continuously measure identified inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

#### 8.1A.2.3.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$\mathbf{T}_{\text{identify inter}} = Max \left\{ 5000, \mathbf{T}_{\text{basic identify TDD,inter}} \cdot \frac{\mathbf{T}_{\text{Measurement Period, Inter}}}{\mathbf{T}_{\text{Inter}}} \cdot N_{Freq} \right\} ms$$

A cell shall be considered detectable when P-CCPCH Ec/Io  $\geq$  -8 dB and DwPCH\_Ec/Io  $\geq$  -5 dB. When L3 filtering is used an additional delay can be expected.

#### 8.1A.2.3.2 UE P-CCPCH <u>RSCP</u> measurement capability

When TDD inter frequency measurements are scheduled, the UE physical layer shall be capable of reporting <u>P-CCPCH</u> <u>RSCP</u> measurements to higher layers with measurement accuracy as specified in section 9 and with measurement period given by

$$T_{\text{measurement inter}} = Max \left\{ T_{\text{Measurement Period, Inter}}, T_{\text{basic measurement TDD inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter}}} \cdot N_{Freq} \right\} ms$$

In case of a dual receiver UE, the measurement period for inter frequency <u>P-CCPCH RSCP</u> measurements is 480 ms.

The UE shall be capable of performing P-CCPCH <u>RSCP</u> measurements for  $X_{\text{basic measurement TDD inter}}$  inter-frequency cells per TDD frequency of the monitored set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of  $T_{\text{Measurement_Inter}}$ .

#### $X_{\text{basic measurement TDDinter}} = 6$

 $T_{Measurement\_Period Inter} = 480 \text{ ms.}$  The period used for calculating the measurement period  $T_{measurement\_inter}$  for inter frequency P-CCPCH <u>RSCP</u> measurements.

- T<sub>Inter:</sub> This is the minimum time available for inter frequency measurements during the period T<sub>Measurement\_Period inter</sub> with an arbitrarily chosen timing. The minimum time depends on the channel allocation and is calculated by assuming [2\*0.1] ms for implementation margin (for the description of the idle intervals see Annex A of 25.225). It is assumed for the requirement that the slot allocation allows measurement windows in the idle periods to be of minimum duration necessary to perform the measurements.
- $T_{\text{basic_identify_TDD,inter}} = 800 \text{ms.}$  This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new TDD cell is defined. (side conditions are defined in subclause 8.1A.2.6).
- $T_{\text{basic\_measurement\_TDD inter}} = 50 \text{ ms.}$  This is the time period used in the equation for defining the measurement period for inter frequency P-CCPCH <u>RSCP</u> measurements.

N<sub>Freq</sub> Number of TDD frequencies indicated in the inter frequency measurement control information.

#### 8.1A.2.3.3 Periodic Reporting

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

# 8.1A.2.3.4 Event Triggered Reporting

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

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

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

The event triggered measurement reporting delay, measured without L3 filtering shall be less than T  $_{identify inter}$  defined in Section 8.1A.2.3.1. When L3 filtering is used an additional delay can be expected.

# <NEXT CHANGED SECTION>

# 8.4A Measurements in CELL\_FACH State (1.28 Mcps option)

## 8.4A.1 Introduction

This section contains requirements on the UE regarding measurement reporting in CELL\_FACH state. The measurements are defined in TS 25.225, the measurement model is defined in TS 25.302 and measurement accuracies are specified in section 9. Control of measurement reporting is specified in TS 25.331 and parallel measurements are specified in section 8.2. For the description of the idle intervals see TS 25.225, Annex A.

# 8.4A.2 Requirements

#### 8.4A.2.1 UE Measurement Capability

The UE shall be able to monitor up to

- 32 intra frequency TDD cells, and
- 32 inter frequency cells, including
  - TDD cells distributed on up to [x] additional TDD carriers and
  - Depending on UE capability, FDD cells, distributed on up to 3 FDD carriers and
- Depending on UE capability 32 GSM cells distributed on up to 32 GSM carriers.

The requirements in section 9 on P-CCPCH RSCP measurements are applicable for a UE performing measurements according to this section. For inter-frequency FDD, TDD and GSM cell re-selection, measurement occasions as specified in TS 25.331 and, in addition, idle intervals as described in TS 25.225 are used to find and measure on these cells.

It is defined below how the measurements on different systems and modes are performed given the time allocated to that system. The time during the measurement occasions and idle intervals that is allocated to each of the different modes and systems shall be equally shared by the modes which the UE has capability for and that are in the monitored set signalled by the network.

The UE is required to measure periodically once every time period  $T_{meas}$  on each of the modes and systems, FDD interfrequency cells, TDD interfrequency cells and GSM carriers, for which the corresponding parameter  $N_{FDD}$ ,  $N_{TDD}$  and  $N_{GSM}$  is set to 1, within the measurement time  $T_{meas}$ 

$$T_{meas} = \left[ \left( N_{FDD} + N_{TDD} + N_{GSM} \right) \cdot N_{TTI} \cdot \mathbf{M}_{REP} \cdot 10 \right] \mathrm{ms}$$

where the following parameters are defined:

$N_{TDD}$	= 0 or 1. If there are inter-frequency TDD cells in the neighbour list $N_{TDD}$ =1, otherwise $N_{TDD}$ =0.
N <sub>FDD</sub>	= 0 or 1. If the UE is capable of FDD and there are FDD cells in the neighbour list $N_{FDD}=1$ otherwise $N_{FDD}=0$ .
N <sub>GSM</sub>	= 0 or 1. If the UE is capable of GSM and there are GSM cells in the neighbour list, $N_{GSM}=1$ , otherwise $N_{GSM}=0$ .
M_REP	is the Measurement Occasion cycle length in number of frames as specified in TS 25.331.
N <sub>TTI</sub>	is the number of frames in each measurement occasion, equal to the length of the largest TTI on the SCCPCH monitored by the UE.

#### 8.4A.2.2 TDD intra frequency measurements

During the CELL\_FACH state the UE shall continuously measure identified intra frequency cells and search for new intra frequency cells in the monitoring set. Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not used for inter frequency measurements.

#### 8.4A.2.2.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify TDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

A cell shall be considered detectable when P-CCPCH Ec/Io  $\geq$  -8 dB, DwPCH\_Ec/Io  $\geq$  -5 dB.

#### 8.4A.2.2.2 UE P-CCPCH <u>RSCP</u> measurement capability

In the CELL\_FACH state the measurement period for intra frequency <u>P-CCPCH RSCP</u> measurements is 200 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing P-CCPCH <u>RSCP</u> measurements for 6 identified intra-frequency cells of the monitored set and the UE physical layer shall be capable of reporting <u>these</u> measurements to higher layers with the measurement period of 200 ms. When inter-frequency measurements are required by the network, the UE shall be capable of performing P-CCPCH <u>RSCP</u> measurements for at least Y<sub>measurement</sub> intra cells , where Y<sub>measurement intra</sub> is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the section 9. If the UE has identified more than Y<sub>measurement intra</sub> cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH <u>RSCP</u> measurements of cells from UE physical layer to higher layers may be decreased.

$$Y_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement TDD}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

X<sub>basic measurement TDD</sub> is specified in section 8.1A.2.2.2

T<sub>Measurement\_Period, Intra</sub> is specified in section 8.1A.2.2.2

T<sub>Intra</sub>: is specified in section 8.1A.2.2.2

T<sub>basic\_identify\_TDD, intra</sub> is specified in section 8.1A.2.2.2

#### 8.4A.2.2.2A Timeslot ISCP measurement capability

In the CELL FACH state the measurement period for intra frequency Timeslot ISCP measurements on arbitrary DL timeslots, including Beacon timeslots is 400 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing Timeslot ISCP measurements on the current serving cell for 5 arbitrary DL timeslots. The UE physical layer shall be capable of reporting Timeslot ISCP measurements to higher layers with the measurement period of 400 ms.

When inter-frequency measurements are required by the network, the UE shall be able to perform Timeslot ISCP measurements on the current serving for at least  $Y_{measurement intra ISCP}$  arbitrary DL timeslots, where  $Y_{measurement intra ISCP}$  is defined in the following equation. Any Timeslot ISCP measurement that could not be performed during that measurement period, shall be measured in the following measurement periods. The measurement accuracy of the Timeslot ISCP measurement shall be as specified in the section 9.

$$Y_{\text{measurement intra ISCP}} = Floor \left\{ X_{\text{basic measurement ISCP}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra, ISCP}}} \right\}$$

whereby function Floor(x) takes the integer part of x,

<u> $X_{\text{basic measurement ISCP}} = 5$  (arbitrary DL timeslots of the current serving cell)</u>

T<sub>Measurement\_Period, Intra, ISCP</sub> is specified in section 8.1A.2.2.2A,

 $T_{Intra}$  is specified in section 8.1A.2.2.2A.

#### 8.4A.2.2.3 RACH Reporting

Reported measurements in the measurement reports sent on the RACH shall meet the requirements in section 9.

## 8.4A.2.3 TDD inter frequency measurements

When signalled by the network during CELL\_FACH state, the UE shall continuously measure identified inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

#### 8.4A.2.3.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify inter}} = Max \left\{ 5000, T_{\text{basic identify TDD,inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter FACH}}} \cdot N_{Freq} \right\} ms$$

A cell shall be considered detectable when P-CCPCH Ec/Io  $\geq$  -8 dB, DwPCH\_Ec/Io  $\geq$  -5 dB.

### 8.4A.2.3.2 UE P-CCPCH <u>RSCP</u> measurement capability

When TDD inter frequency measurements are scheduled, the UE physical layer shall be capable of reporting <u>P-CCPCH</u> <u>RSCP</u> measurements to higher layers with measurement accuracy as specified in section 9 with measurement period given by

$$\mathbf{T}_{\text{measurement inter}} = Max \left\{ \mathbf{T}_{\text{Measurement Period, Inter}}, \mathbf{T}_{\text{basic measurement TDD inter}} \cdot \frac{\mathbf{T}_{\text{Measurement Period, Inter}}}{\mathbf{T}_{\text{Inter FACH}}} \cdot N_{Freq} \right\} ms$$

where

T<sub>Measurement\_Period Inter</sub> is specified in section 8.1A.2.3.2

T Inter FACH: This is the minimum time that is available for the inter frequency <u>P-CCPCH RSCP</u> measurements during the period T<sub>Measurement\_Period inter with an arbitrarily chosen timing. The minimum time depends on the channel allocation and on measurement occasions during CELL\_FACH state and is calculated by assuming [2\*0.1] ms for implementation margin (for the description of the idle intervals see Annex A of 25.225 and for definition of measurement occasions during CELL\_FACH state given by M\_REP and TTI see TS 25.331). It is assumed for the requirement that the slot allocation allows measurement windows in the idle periods to be of minimum duration necessary to perform the measurements. During the measurement occasions for CELL\_FACH state the UE shall measure primarily cells that can not be measured in the idle intervalls.</sub>

T<sub>basic\_identify\_TDD,inter</sub> is specified in section 8.1A.2.3.2

 $T_{basic\_measurement\_TDD inter}$  is specified in section 8.1A.2.3.2

N<sub>Freq</sub> is specified in section 8.1A.2.3.2

If the UE does not need measurement occasions to perform inter-frequency measurements, the measurement period for inter frequency measurements is 480ms.

The UE shall be capable of performing P-CCPCH measurements for  $X_{\text{basic measurement TDD inter}}$  inter-frequency cells per TDD frequency of the monitored set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of  $T_{\text{Measurement_Inter.}}$ 

 $X_{\text{basic measurement TDDinter}}$  is defined in section 8.1A.2.3.2.

# <NEXT CHANGED SECTION>

# A.8.1.2 Event 1H and 1I triggered reporting in AWGN propagation conditions

## A.8.1.2.1 3.84 Mcps TDD option

### A.8.1.2.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of event 1H and event 1I. This test will partly verify the requirements in section 8.1.2 and section 9.1.

The test parameters are given in Table A.8.1.2, Table A.8.1.2A and Table A.8.1.2B below. The test consists of five successive time periods, with a time duration of T1, T2, T3, T4 and T5 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

In the measurement control information it shall be indicated to the UE that event-triggered reporting with event 1H and event 1I shall be used and that Timeslot ISCP and P-CCPCH RSCP shall be reported together with event 1H and 1I. Measurement control information shall be sent to the UE before the beginning of time period T1.

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 10. In addition, timeslots 3 and 4 shall be allocated as DL timeslots. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

Para	meter	Unit	Value	Comment
DCH paramete	ers		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Contro			On	
Target quality DTCH	value on	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2	
Final condition	ndition		Cell 1	
HCS			Not used	
0	dB		0	Cell individual offset. This value shall be used for all cells in the test.
Timeslot list co	neslot list cell 1		2, 3, 4	Timeslot numbers in IE "Cell info" for Cell 1
Timeslot list ce	ell 2		4	Timeslot numbers in IE "Cell info" for Cell 2
Threshold use	ed frequency	dBm	-68	Threshold 1 applicable for event 1H, cell 1 timeslots 2, 4 and cell 2 timeslot 4
Threshold use	ed frequency	dBm	-73	Threshold 2 applicable for event 1H, cell 1 timeslots 2, 3, 4 and cell 2 timeslot 4
Threshold use	ed frequency	dBm	-67	Applicable for event 1I, cell 1 timeslots 2, 4 and cell 2 timeslot 4
Hysteresis		dB	0	
Time to Trigge	er	ms	0	
Filter coefficie	nt		0	
Monitored cell	list size		6 TDD neighbours on Channel 1	Cell 2 shall belong to the monitored set
T1		S	5	
T2			5	
T3			5	
T4		S	5	
T5		S	5	

# Table A.8.1.2: General test parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit					Ce	ll 1				
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRA RF Channel						Char	nnel 1				
Number						Char	iner i				
DL timeslot number				0					2		
PCCPCH_Ec/lor	dB			-3					n.a.		
SCH_Ec/lor	dB			-9					n.a.		
SCH_t <sub>offset</sub>	dB			5					n.a.		
DPCH_Ec/lor	dB			n.a.					Note 1		
OCNS_Ec/lor	dB			-3,12					Note 2		
$\hat{I}_{or}/I_{oc}$	dB			4					4		
PCCPCH RSCP	dBm			-69					n.a.		
I <sub>oc</sub>	dBm / 3,84 MHz		-70								
Propagation Condition			AWGN								
DL timeslot number				3					4		
PCCPCH_Ec/lor	dB			n.a.					n.a.		
SCH_Ec/lor	dB			n.a.					n.a.		
SCH_t <sub>offset</sub>	dB			n.a.					n.a.		
DPCH_Ec/lor	dB			n.a.					n.a.		
OCNS_Ec/lor	dB			0					0		
$\hat{I}_{or}/I_{oc}$	dB			3					0		6
PCCPCH RSCP	dBm			n.a.					n.a.		
I <sub>oc</sub>	dBm / 3,84 MHz		-70								
Propagation Condition						AW	/GN				
Note 1: The DPCH level	is controlled b	y the po	ower con	trol loop							
Note 2: The power of the	OCNS chann	el that	is added	shall ma	ake the to	otal powe	r from t	he cell to	o be equa	l to lor	

# Table A.8.1.2A: Cell 1 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition

# Table A.8.1.2B: Cell 2 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit					Ce	ll 2				
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRA RF Channel						Char	nnel 1				
Number						Griai					
DL timeslot number				0					2		
PCCPCH_Ec/lor	dB			-3					n.a.		
SCH_Ec/lor	dB			-9					n.a.		
SCH_t <sub>offset</sub>	dB			10					n.a.		
DPCH_Ec/lor	dB			n.a.					n.a.		
OCNS_Ec/lor	dB			-3,12					0		
$\hat{I}_{or}/I_{oc}$	dB			1			0	6		0	
PCCPCH RSCP	dBm			-72					n.a.		
I <sub>oc</sub>	dBm /					-7	70				
	3,84 MHz					A1A					
Propagation Condition DL timeslot number				3		AW	/GN		4		
	dB										
PCCPCH_Ec/lor				n.a.					n.a.		
SCH_Ec/lor	dB			n.a.					n.a.		
SCH_t <sub>offset</sub>	dB			n.a.					n.a.		
DPCH_Ec/lor	dB			n.a.					n.a.		
OCNS_Ec/lor	dB			0					0		
$\hat{I}_{or}/I_{oc}$	dB			3				6		(	C
PCCPCH RSCP	dBm	n.a. n.a.									
I	dBm /	-70									
I <sub>oc</sub>	3,84 MHz						0				
Propagation Condition						AW	/GN				

## A.8.1.2.1.2 Test Requirements

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T2.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T3.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T4.

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T5.

The UE shall not send event 1H or 1I triggered measurement reports, as long as the reporting criteria are not fulfilled.

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

## A.8.1.2.2 1.28 Mcps TDD option

<del>Void</del>

#### A.8.1.2.2.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of event 1H and event 1I. This test will partly verify the requirements in section 8.1A.2 and section 9.1.

The test parameters are given in Table A.8.1.2C, Table A.8.1.2D and Table A.8.1.2E below. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

In the measurement control information it shall be indicated to the UE that event-triggered reporting with event 1H and event 1I shall be used and that Timeslot ISCP and P-CCPCH RSCP shall be reported together with event 1H and 1I. Measurement control information shall be sent to the UE before the beginning of time period T1.

The UL DPCH shall be transmitted in timeslot 2. In addition, timeslots 5 and 6 shall be allocated as DL timeslots.

			<u>condition</u>	
Paran	neter	Unit	Value	Comment
DCH paramete	ers active cell		DL Reference Measurement	As specified in TS 25.102 section A.
			Channel 12.2 kbps	
Power Control			On	
Target quality	<u>value on</u>	<u>BLER</u>	<u>0.01</u>	
Initial	Active cell		<u>Cell 1</u>	
conditions	<u>Neighbour</u> cell		<u>Cell 2</u>	
Final condition	Active cell		<u>Cell 1</u>	
<u>0</u>		<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be used for all cells in the test.
Timeslot list ce	<u>   1</u>		<u>5, 6</u>	Timeslot numbers in IE "Cell info" for Cell 1
Timeslot list ce	<u>ll 2</u>		<u>6</u>	Timeslot numbers in IE "Cell info" for Cell 2
Threshold used	d frequency	<u>dBm</u>	<u>-68</u>	Applicable for event 1H, cell 1 timeslots 5, <u>6 and cell 2 timeslot 6</u>
Threshold used	<u>d frequency</u>	<u>dBm</u>	<u>-66</u>	Applicable for event 11, cell 1 timeslots 5, 6 and cell 2 timeslot 6
<b>Hysteresis</b>		<u>dB</u>	<u>0</u>	
Time to Trigge		<u>ms</u>	<u>0</u>	
Filter coefficier	nt		<u>0</u>	
Monitored cell	list size		<u>6 TDD neighbours on Channel 1</u>	Cell 2 shall belong to the monitored set
<u>T1</u>		<u>s</u>	<u>5</u>	
<u>T2</u>		<u>s</u>	<u>5</u>	
<u>T3</u>		<u>s</u>	<u>5</u>	
<u>T4</u>		<u>S</u>	<u>5</u>	

# Table A.8.1.2C: General test parameters for correct event 1H and 1I reporting in AWGN propagation condition

# Table A.8.1.2D: Cell 1 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit						Cell 1						
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>
<u>UTRA RF Channel</u> Number						<u>(</u>	Channe	11				-	
DL timeslot number				<u>0</u>				<u>5</u>			6	<u>6</u>	
PCCPCH_Ec/lor	<u>dB</u>			<u>-3</u>									
DPCH_Ec/lor	<u>dB</u>						No	te 1					
OCNS_Ec/lor	<u>dB</u>			<u>-3</u>			No	te 2			(	)	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>			<u>4</u>				<u>3</u>		<u>0</u>	<u>6</u>	<u>}</u>	<u>0</u>
PCCPCH RSCP	<u>dBm</u>			<u>-69</u>			<u>n</u>	<u>.a.</u>			<u>n.</u>	<u>a.</u>	
I <sub>oc</sub>	<u>dBm /</u> 1.28 MHz		<u>-70</u>										

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

Table A.8.1.2E: Cell 2 specific test parameters for correct event 1H and 1I reporting in AWGN

Parameter	<u>Unit</u>		<u>Ce</u>	<u>ll 2</u>					
		<u>T1 T2 </u>	<u>T3 T4</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>		
UTRA RF Channel			Char	nnel 1					
Number									
DL timeslot number		<u>0</u>			<u>6</u>				
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>							
DPCH_Ec/lor	<u>dB</u>								
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>			<u>0</u>				
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>4</u>		<u>6</u>		9	<u>0</u>		
PCCPCH RSCP	dBm	-69			n.a				
I <sub>oc</sub>	<u>dBm /</u> <u>1.28 MHz</u>	-70							

## propagation condition

## A.8.1.2.2.2 Test Requirements

The UE shall send one event 11 triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T2.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T3.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T4.

The UE shall not send event 1H or 1I triggered measurement reports, as long as the reporting criteria are not fulfilled.

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

R4-020973

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

	CR-Form-v5.1 CHANGE REQUEST
æ	<b>25.123</b> CR <b>218 * rev 1 *</b> Current version: <b>4.4.0 *</b>
For <u>HELP</u> on u	sing this form, see bottom of this page or look at the pop-up text over the $#$ symbols.
Proposed change a	affects: # (U)SIM ME/UE X Radio Access Network Core Network
Title: ж	Correction to TDD section 9 testing in Annex A9 for 1.28 Mcps TDD
Source: ೫	RAN WG4
Work item code: %	LCRTDD-RF Date: # 17/5/2002
Category:	FRelease: %Rel-4Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D tetailed explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5
Reason for change	<ul> <li>Currently, test cases for UE measurement accuracy requirements in Section 9 are defined in a very general way and not on a measurement-specific basis. Additionally more details on test parameters could be given on a measurement-specific test case by measurement-specific test case basis in section A.9.1A.</li> </ul>
Summary of chang	<b>Je:</b> # Move of existing 1.28Mcps TDD test cases from A.9.1 to A.9.1A Introduction of subsection A.9.1A for measurement-specific test cases for P- CCPCH RSCP, CPICH RSCP, Timeslot ISCP, UTRA carrier RSSI, SFN-SFN observed time difference type 1 and SFN-CFN observed time difference measurements for 1.28Mcps Option. Test parameter tables updated.
Consequences if not approved:	<ul> <li>Critical UE measurement accuracy requirements cannot be tested.</li> <li><u>Isolated impact analysis</u>: This CR introduces test cases for already existing critical requirements on UE measurement accuracies.</li> </ul>
Clauses affected:	策 A.9.1, A.9.1A (new)
Other specs affected:	%Other core specifications%XTest specifications34.122O&M Specifications34.122
Other comments:	¥ Equivalent CRs in other Releases: CR219r1 cat. A to 25.123 v5.0.0

How to create CRs using this form:

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

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

# A.9.1 Measurement Performance for UE

If not otherwise stated, in this clause the test parameters in table A.9.1 should be applied for 3.84 Mcps TDD UE RX measurements requirements and the test parameters in table A.9.1A should be applied for 1.28 Mcps TDD UE RX measurements requirements.

# A.9.1.1 TDD intra frequency measurements

### A.9.1.1.1 3.84 Mcps TDD option

In this case all cells are on the same frequency. The table A.9.1 and notes 1-5 define the limits of signal strengths and code powers, where the requirement is applicable.

Parameter	Unit	Cell 1		Cell 2	
UTRA RF Channel number		Char	nel 1	Channel 1	
Timeslot		0	8	0	8
P-CCPCH Ec/lor	dB	-3	-	-3	-
SCH Ec/lor	dB	-9	-9	-9	-9
PICH_Ec/lor	dB	-	-3	-	-3
OCNS	dB	-4,28	-4,28	-4,28	-4,28
Îor/loc	dB	[	]	[	]
loc	dBm/ 3,84 MHz	-70		-70	
Range 1:lo	dBm	-9470		-9470	
Range 2: lo	UDIII	-9450		-9450	
Propagation condition	-	AW	GN	AWGN	

#### Table A.9.1 Intra frequency test parameters for UE RX Measurements

- Note 1: P-CCPCH\_RSCP1,2  $\geq$  -[102] dBm.
- Note 2:  $|P-CCPCH_RSCP1 PCCPCH_RSCP2| \le 20 \text{ dB}.$
- Note 3: |Io P-CCPCH\_Ec/Ior $| \leq [20]$  dB.
- Note 4: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor  $\hat{I}or/Ioc$ .
- Note 5: The DPCH of all cells are located in an other timeslot than 0 or 8

### A.9.1.1.2 1.28 Mcps TDD option

If not otherwise stated, the test parameters in table A.9.1A should be applied for UE RX measurements requirements in this section.

Table A 91A Intra free	woncy tost i	narameters for LIF	RY Mossurements
Tuble A. S. A. III. III.	uchey test		TA measurements

Parameter	Unit	Cell 1				Ce	<del>   2</del>		
Timeslot Number		<del>(</del>	•	DwPTS		θ		<b>DwPTS</b>	
		<del>T1</del>	<del>T2</del>	<del>T1</del>	<del>T2</del>	<del>T1</del>	<del>T2</del>	<del>T1</del>	<del>T2</del>
UTRA RF Channel Number		Channel 1			Channel 2				
PCCPCH_Ec/lor	dB	-3			-3				
DwPCH_Ec/lor	d₿	θ				(	•		
$\frac{\hat{I}_{or}}{I_{oc}}$	d₿	<del>-[3]</del>	<del>[3]</del>			-Infinity	<del>[6]</del>		
-I <sub>oc</sub>	<del>dBm/1.</del> <del>28 MHz</del>	-70							
<del>Range 1:lo</del> <del>Range 2:lo</del>	<del>dBm</del>	<del>-9470</del> <del>9450</del>					<del>70</del> <del>50</del>		
Propagation condition				:	AWGN				

 Note 1:
 P CCPCH\_RSCP1,2 ≥ [102] dBm.

 Note 2:
 / P CCPCH\_RSCP1 – PCCPCH\_RSCP2 /≤ 20 dB.

 Note 3:
 / Io – P CCPCH\_RSCP/ ≤ [20] dB.

 Note 4:
 Ioc level shall be adjusted according the total signal power Io at receiver input and the geometry factor Îor/Ioc.

 Note 5:
 The DPCH of all cells are located in a timeslot other than 0

# A.9.1.2 TDD inter frequency measurements

## A.9.1.2.1 3.84 Mcps TDD option

In this case all cells are on the same frequency. The table A.9.2 and notes 1-5 define the limits of signal strengths and code powers, where the requirement is applicable.

Parameter	Unit	Cell 1		Cell 2	
UTRA RF Channel number		Channel 1		Channel 2	
Timeslot		0	8	0	8
P-CCPCH Ec/lor	dB	-3	-	-3	-
SCH Ec/lor	dB	-9	-9	-9	-9
PICH_Ec/lor	dB	-	-3	-	-3
OCNS	dB	-4,28	-4,28	-4,28	-4,28
Îor/loc	dB	[	]	[	]
loc	dBm/ 3,84 MHz	-7	70	-70	
Range 1:lo	dBm	-9470		-9470	
Range 2: lo	UDIII	-9450		-9450	
Propagation condition	-	AW	'GN	AWGN	

- Note 1: P- $CCPCH_RSCP1, 2 \ge -[102]$  dBm.
- Note 2: / P-CCPCH\_RSCP1 PCCPCH\_RSCP2  $\leq 20 \text{ dB}$ .
- Note 3: | Io P-CCPCH\_Ec/Ior $| \leq [20] dB$ .
- Note 4: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.
- Note 5: The DPCH of all cells are located in an other timeslot than 0 or 8

## A.9.1.2.2 1.28 Mcps TDD option

If not otherwise stated, the test parameters in table A. 9.2A should be applied for UE RX measurements requirements in this section.

Parameter	Unit	Cell 1				<del>C</del> e	<del>   2</del>		
Timeslot Number		<del>(</del>	<del>)</del>	Dwl	<u>275</u>	Ð		DwPTS	
		<del>1</del> 1	<del>T2</del>	<del>1</del> 4	<del>T2</del>	<b>T1</b>	<del>T2</del>	<del>T1</del>	<del>T2</del>
UTRA RF Channel Number		Channel 1				Char	<del>inel 2</del>		
PCCPCH_Ec/lor	₿	-3		-3					
DwPCH_Ec/lor	d₿	<del>Q</del>				(	•		
$\frac{\hat{I}_{or}}{I_{oc}}$	dB	<del>-[3]</del>	<del>[3]</del>			-Infinity	<del>[6]</del>		
-I <sub>oc</sub>	<del>dBm/1.</del> <del>28 MHz</del>	-70							
<del>Range 1:lo</del> <del>Range 2:lo</del>	dBm	<del>-9470</del> <del>9450</del>				_04	<del>70</del> . <del>50</del>		
Propagation condition					AWGN				

#### Table A. 9.2A: Intra frequency test parameters for UE RX Measurements

#### Note 1: P CCPCH\_RSCP1, $2 \ge [102]$ dBm.

Note 2: / *P-CCPCH\_RSCP1* – *PCCPCH\_RSCP2* |≤ 20 dB.

Note 3:  $|I_0 P CCPCH_RSCP1, 2| \leq [20] dB$ .

Note 4: *loc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.

Note 5: The DPCH of all cells are located in a timeslot other than 0

# A.9.1.3 FDD inter frequency measurements

### A.9.1.3.1 3.84 Mcps TDD option

In this case both cells are in different frequency. Table A.9.3 and notes 1-6 define the limits of signal strengths and code powers, where the requirement is applicable.

Parameter	Unit	Ce	ll 1	Cell 2
Timeslot Number		0	8	n.a
UTRA RF Channel Number		Chan	nel 1	Channel 2
CPICH_Ec/lor	dB	n.a.	n.a.	-10
P-CCPCH_Ec/lor	dB	-3		-12
SCH_Ec/lor	dB	-9	-9	-12
SCH_t <sub>offset</sub>		0	0	n.a.
PICH_Ec/lor			-3	-15
DPCH_Ec/lor	dB	n.a.	n.a.	-15
OCNS	dB	-4.28	-4.28	-1,11
$\hat{I}_{or}/I_{oc}$	dB	0	[]	10,5
$I_{oc}$	dBm/3,84 MHz	-70		Note 5
Range 1:lo Range 2: lo	dBm	-9470 -9450		-9470 -9450
Propagation condition	-	AW		AWGN

#### Table A.9.3 CPICH Inter frequency test parameters

- Note 1:  $CPICH_RSCP1, 2 \ge -114 \text{ dBm}.$
- Note 2:  $/ CPICH_RSCP1 CPICH_RSCP2 / \le 20 \text{ dB}$
- Note 3: / Channel 1\_Io –Channel 2\_Io/  $\leq$  20 dB
- Note 4:  $/ Io CPICH\_Ec/Ior / \le 20 \text{ dB}$

- Note 5: *Ioc* level shall be adjusted in each carrier frequency according the total signal power *Io* at receiver input and the geometry factor  $\hat{Ior}/Ioc$ . *Io* -10,6 dB = Ioc
- Note 6: The DPCH of the TDD cell is located in an other timeslot than 0 or 8

# A.9.1.4 UTRA carrier RSSI inter frequency measurements

## A.9.1.4.1 3.84 Mcps TDD option

The table A.9.4 and notes 1,2 define the limits of signal strengths, where the requirement is applicable.

#### Table A.9.4: UTRA carrier RSSI Inter frequency test parameters

Parameter		Unit	Cell 1	Cell 2			
UTRA R	F Channei number	-	Channel 1	Channel 2			
	Îor/loc	dB	-1	-1			
loc		dBm/ 3.84 MHz	Note 2	Note 2			
F	Range 1: lo	dBm/ 3,84 MHz	-9470	-9470			
F	Range 2: lo		-9450	-9450			
Propa	agation condition	-	AWGN				
	Note 1: For relative accuracy requirement   Channel 1_Io –Channel 2_Io   < 20 dB.						
Note 2: <i>loc</i> level shall be adjusted according the total signal power <i>lo</i> at receiver input and the							
geometry factor <i>Îor/loc</i> .							

## A.9.1.4.2 1.28 Mcps TDD option

The table A.9.4A and notes 1,2 define the limits of signal strengths, where the requirement is applicable.

#### Table A.9.4A: UTRA carrier RSSI Inter frequency test parameters

Parameter	Unit	Cell 1	Cell 2			
UTRA RF Channei number	-	Channel 1	Channel 2			
Îor/loc	DB	-1	-4			
loc	dBm/1.28 MHz	Note 2	Note 2			
Range 1: lo	dBm/1.28 MHz	<del>-9470</del>	<del>-9470</del>			
Range 2: lo		<del>-9450</del>	<del>-9450</del>			
Propagation condition	-	AW	<del>'GN</del>			
Note 1: For relative accuracy requirement / Channel 1_Io - Channel 2_Io / < 20 dB.						
Note 2: /oc level shall be adjusted according the total signal power /o at receiver input and						
the geometry factor lor/loc.						

# A.9.1A Measurement Performance for UE for 1.28 Mcps TDD

# A.9.1A.1 P-CCPCH RSCP

## A.9.1A.1.1 Test Purpose and Environment

The purpose of this test is to verify that the P-CCPCH RSCP measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.1.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

#### A.9.1A.1.1.1 Intra frequency test parameters

Both P-CCPCH RSCP intra frequency absolute and relative accuracy requirements are tested by using test parameters in Table A.9.1A.

			Test 1			
Parameter	Unit	Ce	ell 1	Ce	ell 2	
Timeslot Number		0	DwPTS	0	DwPTS	
UTRA RF Channel	ĺ					
Number		<u>Channel 1</u>		Channel 1		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>		<u>2</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>		<u>-7</u>	<u>′6.6</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-74.6</u>		<u>-77.6</u>		
lo, Note 1	<u>dBm/1.2</u> <u>8 MHz</u>			<u>69</u>		
Propagation condition				<u>VGN</u>		
			<u>Test 2</u>			
Parameter Parameter	<u>Unit</u>		<u>ell 1</u>		<u>ll 2</u>	
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
UTRA RF Channel <u>Number</u>		<u>Char</u>	nnel 1	Char	nnel 1	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>9</u>		2	
Ioc	<u>dBm/1.2</u> <u>8 MHz</u>		<u>-6</u>	<u>60.2</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-54.2</u>		<u>-61.2</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		=	<u>50</u>		
Propagation condition			AV	<u>VGN</u>		
			Test 3			
Parameter	<u>Unit</u>	Ce	<u>ell 1</u>	Ce	<u>ll 2</u>	
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
UTRA RF Channel Number		<u>Char</u>	nnel 1	<u>Char</u>	nnel 1	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\frac{\hat{I}_{or}/I_{oc}}{\hat{I}_{oc}}$	<u>dB</u>		<u>5</u>		<u>3</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-101.9</u>				
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-99.9</u>		<u>-101.9</u>		
lo, Note 1	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-94</u>				
Propagation condition	<u><u> </u></u>	AWGN				
NOTE 1: PCCPCH R	SCP and lo	levels have bee			s for information	
purposes. They are not settable parameters themselves.						

## Table A.9.1A: P-CCPCH RSCP Intra frequency test parameters

A.9.1A.1.1.2 Inter frequency test parameters

P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in Table A.9.2A.

	1		Toot 1			
Parameter	Unit	Ce	<u>Test 1</u> ell 1	Ce	II 2	
Timeslot Number	<u>01111</u>	0	DwPTS	0	DwPTS	
UTRA RF Channel						
Number		Channel 1		<u>Char</u>	nel 2	
PCCPCH_Ec/lor	dB	-3		<u>-3</u>		
DwPCH_Ec/lor	dB		0		0	
OCNS Ec/lor	dB	-3		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>		5	
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz	<u>-7</u>	<u>5.2</u>	<u>-7</u> !	<u>5.2</u>	
PCCPCH RSCP, Note 1	dBm	<u>-73.2</u>		<u>-73.2</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		<u>-</u>	<u>69</u>	I	
Propagation condition			AM	/GN		
			Test 2			
Parameter	Unit	Ce	ell <u>1</u>	Ce	ll <u>2</u>	
Timeslot Number		<u>0</u>	DwPTS	0	DwPTS	
UTRA RF Channel		Char	nnel 1	Chor	nel 2	
<u>Number</u>				Char		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		7	2		
$I_{oc}$	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-5</u>	<u>7.8</u>	<u>-54.1</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-53.8</u>		<u>-55.1</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz			<u>50</u>		
Propagation condition			AM	/GN		
			Test 3			
Parameter Parameter	<u>Unit</u>	Ce		Ce	<u>ll 2</u>	
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
<u>UTRA RF Channel</u> Number		<u>Char</u>	nnel 1	<u>Char</u>	nnel 2	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	dB		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	dB	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	3		(	<u>0</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-98.7</u>		<u>-9</u>	<u>)7</u>	
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-98.7</u>		<u>-100</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz	<u>-94</u>				
Propagation condition		AWGN				
NOTE 1: PCCPCH R	SCP and lo	levels have been			for information	
			ble parameters th			

## Table A.9.2A: P-CCPCH RSCP Inter frequency tests parameters

# A.9.1A.1.2 Test Requirements

The P-CCPCH RSCP measurement accuracy shall meet the requirements in section 9.1.1.1.

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

# A.9.1A.2 CPICH measurements

# A.9.1A.2.1 CPICH RSCP

## A.9.1A.2.1.1 Test Purpose and Environment

The purpose of this test is to verify that the CPICH RSCP measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.2 and applies to UE's supporting this capability.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

## A.9.1A.2.1.1.1 Inter frequency test parameters

Cell 1 is a UTRA TDD cell and cell 2 is a UTRA FDD cell.

CPICH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table A.9.3A.

### Table A.9.3A: CPICH RSCP Inter frequency tests parameters

Peremeter	Unit	Test 1			Test 2		
<u>Parameter</u>	<u>Unit</u>	<u>Ce</u>	<u>   1</u>	<u>Cell 2</u>	<u>Ce</u>	ell 1	Cell 2
DL timeslot number		<u>0</u>	DwP TS	<u>n.a.</u>	<u>0</u>	DwP TS	<u>n.a.</u>
UTRA RF Channel number		Char	nel <u>1</u>	Channel 2	Char	nnel <u>1</u>	Channel 2
CPICH_Ec/lor	<u>dB</u>	<u>n.</u>	<u>a.</u>	<u>-10</u>	<u>n.a.</u>		<u>-10</u>
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-12</u>	<u>-3</u>		<u>-12</u>
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>	<u>n.a.</u>		<u>0</u>	<u>n.a.</u>
SCH_Ec/lor	<u>dB</u>	<u>n.</u>	<u>a.</u>	<u>-12</u>	n.a.		<u>-12</u>
PICH_Ec/lor	<u>dB</u>		<u>a.</u>	<u>-15</u>	<u>n</u>	. <u>a.</u>	<u>-15</u>
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-0.94</u>	<u>-3</u>		<u>-0.94</u>
loc, Note 2	<u>dBm/ 3.84</u> <u>MHz</u>	<u>n.</u>	<u>a.</u>	<u>-60</u>	<u>n</u>	<u>.a.</u>	<u>-84</u>
loc, Note 2	<u>dBm/ 1.28</u> <u>MHz</u>	<u>-5</u>	7.7	<u>n.a.</u>	<u>-8</u>	<u>4.7</u>	<u>n.a.</u>
Îor/loc	<u>dB</u>		<u>7</u>	<u>9.54</u>		<u>3</u>	<u>0</u>
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-53.7</u>		<u>n.a.</u>	<u>-</u> 84.7		<u>n.a.</u>
CPICH RSCP, Note 1	<u>dBm</u>	<u>n</u> .	<u>a.</u>	<u>-60.46</u>	<u>n</u>	. <u>a.</u>	<u>-94</u>
<u>lo, Notes 1, 2</u>	<u>dBm/3.84</u> <u>MHz</u>	<u>n.</u>	<u>a.</u>	<u>-50</u>	<u>n</u>	<u>.a.</u>	<u>-81</u>
<u>lo, Notes 1, 2</u>	<u>dBm/1.28</u> <u>MHz</u>	<u>-5</u>	<u>50</u>	<u>n.a.</u>	<u>-</u> {	<u>30</u>	<u>n.a.</u>
Propagation condition <u>AWGN</u> AWGN							
NOTE 1: PCCPCH RSCP, CPICH RSCP and lo levels have been calculated from other parameters for							
information purposes. They are not settable parameters themselves.							
NOTE 2: loc and lo are given independently for TDD and FDD cells.							

## A.9.1A.2.1.2 Test Requirements

The CPICH RSCP measurement accuracy shall meet the requirements in section 9.1.1.2.

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

A.9.1A.2.2 CPICH Ec/lo

# NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements in sections 9.1.1.3 exists.A.9.1A.3 Timeslot ISCP

# A.9.1A.3.1 Test Purpose and Environment

The purpose of this test is to verify that the Timeslot ISCP measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.3.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

# A.9.1A.3.1.1 Intra frequency test parameters

The Timeslot ISCP intra frequency absolute accuracy requirements are tested by using test parameters in Table A.9.4A.

	Test 1						
<b>Parameter</b>	Unit	<u>C</u>	ell 1	<u>C</u>	Cell 2		
Timeslot Number		<u>0</u>	DwPTS	<u>0</u>	DwPTS		
UTRA RF Channel		Channel 1		Cho	nnel 1		
<u>Number</u>				Channel 1			
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>			
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>		
OCNS Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>			
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>	<u>2</u>			
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-76.6</u>					
TS ISCP, Note 1	dBm	-74.6		-71.6			
lo, Note 1	<u>dBm/1.2</u> 8 MHz	<u></u>					
Propagation condition			AV	VGN			
			Test 2				
Parameter	Unit	C	ell 1	Ce	Cell 2		
Timeslot Number		0	DwPTS	0	DwPTS		
UTRA RF Channel				0.			
Number		Cha	annel 1	Channel 1			
PCCPCH_Ec/lor	dB	-3		-3			
DwPCH_Ec/lor	dB		0		0		
OCNS_Ec/lor	dB	-3	_	-3			
$\hat{I}_{or}/I_{oc}$	dB		<u>9</u>		<u>2</u>		
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz	<u>-60.2</u>					
TS ISCP, Note 1	dBm	-58.2		-51.2			
<u>lo, Note 1</u>	<u>dBm/1.2</u> 8 MHz	-50					
Propagation condition	0.11112		AV	VGN			
<u>r ropagatori conditori</u>			Test 3				
Parameter	Unit	C	cell 1	Ce	ell 2		
Timeslot Number		0	DwPTS	0	DwPTS		
UTRA RF Channel	( F		· · · · · · · · · · · · · · · · · · ·				
Number		<u>Cha</u>	annel 1	Channel 1			
PCCPCH_Ec/lor	dB	-3		-3			
DwPCH_Ec/lor	dB		0		0		
OCNS Ec/lor	dB	<u>-3</u>		<u>-3</u>			
$\hat{I}_{or}/I_{oc}$	dB	<u>5</u>		3			
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz	<u>-101.9</u>					
TS ISCP, Note 1	dBm	<u>-98.9</u>		<u>-96.9</u>			
<u>lo, Note 1</u>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-94</u>					
Propagation condition		AWGN					
NOTE 1: TS ISCF	and to levels	have been o			r information		
			able parameters t				

## Table A.9.4A: Timeslot ISCP Intra frequency test parameters

# A.9.1A.3.2 Test Requirements

The Timeslot ISCP measurement accuracy shall meet the requirements in section 9.1.1.3. The rate of correct measurements observed during repeated tests shall be at least 90%.

# A.9.1A.4 UTRA carrier RSSI

## A.9.1A.4.1 Test Purpose and Environment

The purpose of this test is to verify that the UTRA Carrier RSSI measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.4.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

## A.9.1A.4.1.1 Inter frequency test parameters

Both UTRA Carrier RSSI absolute and relative accuracy requirements are tested by using test parameters in Table <u>A.9.5A.</u>

	Test 1						
Parameter	Unit	Cell 1		C	Cell 2		
Timeslot Number		0 DwPTS		0	DwPTS		
UTRA RF Channel		Channel 1					
Number		Char	<u>nnel 1</u>	Cha	annel 2		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>			
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>		
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>			
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>		<u>5</u>		
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz	<u>-7</u>	<u>5.2</u>	<u>-75.2</u>			
lo Noto 1	dBm/1.2			60			
lo, Note 1	<u>8 MHz</u>			<u>69</u>			
Propagation condition				<u>/GN</u>			
			Test 2				
Parameter	<u>Unit</u>				ell 2		
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>		
UTRA RF Channel Number		<u>Char</u>	<u>nnel 1</u>	<u>Channel 2</u>			
PCCPCH_Ec/lor	dB	-3		-3			
DwPCH_Ec/lor	dB		0		0		
OCNS_Ec/lor	dB	-3	<u> </u>	-3	<u> </u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>z</u>			2		
Ioc	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-57.8</u>		<u>-54.1</u>			
lo, Note 1	<u>dBm/1.2</u> 8 MHz		1	<u>50</u>			
Propagation condition			AM	/GN			
			Test 3				
Parameter Parameter	<u>Unit</u>		<u>ll 1</u>		ell 2		
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>		
UTRA RF Channel Number		Channel 1		Channel 2			
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>			
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>		
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>			
$\underline{\hat{I}_{or}/I_{oc}}$	<u>dB</u>	<u>3</u>		<u>0</u>			
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-98.7</u>			<u>-97</u>		
<u>lo, Note 1</u>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-94</u>					
Propagation condition							
NOTE 1: lo levels ha					poses. They are		
	no	t settable param	eters themselves	<u>.</u>			

#### Table A.9.5A: UTRA Carrier RSSI Inter frequency tests parameters

# A.9.1A.4.2 Test Requirements

The UTRA Carrier RSSI absolute measurement accuracy shall meet the requirements in section 9.1.1.4.

The UTRA Carrier RSSI relative measurement accuracy shall meet the requirements in Table A.9.6A by taking into account the effect of thermal noise and noise added by the receiver.

### Table A.9.6A: UTRA Carrier RSSI relative accuracy

		Accura	<b>Conditions</b>	
Parameter	<u>Unit</u>	Normal condition	Extreme condition	<u>lo [dBm/1.28</u> <u>MHz]</u>
	<u>dBm</u>	<u>-45.2</u>	<u>-78.2</u>	<u>-9487</u>
UTRA Carrier RSSI	<u>dBm</u>	<u>± 4</u>	<u>± 7</u>	<u>-8770</u>
	<u>dBm</u>	<u>± 6</u>	± 9	<u>-7050</u>

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

# A.9.1A.5 GSM carrier RSSI

NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements in sections 9.1.1.5 exists.

# <u>A.9.1A.6 SIR</u>

NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements in sections 9.1.1.6 exists.

# A.9.1A.7 Transport channel BLER

NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements in sections 9.1.1.7 exists.

# A.9.1A.8 SFN-SFN observed time difference

# A.9.1A.8.1 SFN-SFN observed time difference type 1

A.9.1A.8.1.1 Test Purpose and Environment

The purpose of this test is to verify that the SFN-SFN observed time difference type 1 measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.8.

<u>Cell 1 and cell 2 shall be synchronised. During the test, the timing difference between cell 1 and cell 2 can be set to valid values in the range 0...3276800 chip.</u>

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

## A.9.1A.8.1.1.1 Intra frequency test parameters

In this case all cells are on the same frequency. The SFN-SFN observed time difference type 1 accuracy requirements in the intra-frequency case are tested by using test parameters in Table A.9.7A.

	Test 1						
Parameter	Unit	Cell 1 Cell 2					
Timeslot Number		0	DwPTS	0 DwPTS			
UTRA RF Channel	[ ]						
Number		Char	nnel 1	Char	<u>Channel 1</u>		
PCCPCH_Ec/lor	dB	<u>-3</u>		<u>-3</u>			
DwPCH_Ec/lor	dB		0		0		
OCNS_Ec/lor	dB	<u>-3</u>		<u>-3</u>			
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>		2		
Ioc	<u>dBm/1.2</u> <u>8 MHz</u>		<u>-7</u>	6.6			
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-74.6</u>		<u>-77.6</u>			
lo, Note 1	<u>dBm/1.2</u> <u>8 MHz</u>		:	<u>69</u>			
Propagation condition			AV	VGN			
			Test 2				
Parameter <b>Parameter</b>	<u>Unit</u>	Ce	<u>ll 1</u>	Ce	<u>ll 2</u>		
Timeslot Number		<u>0</u>	<b>DwPTS</b>	<u>0</u>	<b>DwPTS</b>		
UTRA RF Channel	[	Char	nnel 1				
Number		Char	<u>inel i</u>	<u>Channel 1</u>			
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>			
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>		
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>			
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>9</u> <u>2</u>					
	<u>dBm/1.2</u> <u>8 MHz</u>		<u>-6</u>	<u>60.2</u>			
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-54.2</u>		<u>-61.2</u>			
lo, Note 1	<u>dBm/1.2</u> 8 MHz	<u>-50</u>					
Propagation condition		AWGN					
			Test 3				
Parameter	<u>Unit</u>	Ce	<u>ll 1</u>	Ce	<u>ll 2</u>		
Timeslot Number		<u>0</u>	<b>DwPTS</b>	<u>0</u>	<u>DwPTS</u>		
UTRA RF Channel Number		Char	nnel 1	<u>Channel 1</u>			
PCCPCH Ec/lor	dB	<u>-3</u>		<u>-3</u>			
DwPCH_Ec/lor	dB		0		0		
OCNS_Ec/lor	dB	<u>-3</u>	_	<u>-3</u>	_		
$\hat{I}_{or}/I_{oc}$	dB	5			<u>3</u>		
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz	<u>-101.9</u>					
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-99.9</u>		<u>-101.9</u>			
lo, Note 1	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-94</u>					
Propagation condition	<u><u> </u></u>	AWGN					
	NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information						
	purposes. They are not settable parameters themselves.						
pulposes. They are not settable parameters themselves.							

## Table A.9.7A: SFN-SFN observed time difference type 1 Intra frequency test parameters

# A.9.1A.8.1.1.2 Inter frequency test parameters

The SFN-SFN observed time difference type 1 accuracy requirements in the inter-frequency case are tested by using test parameters in Table A.9.8A.

	Test 1					
Parameter	Unit					
Timeslot Number		0 DwPTS		0 DwPTS		
UTRA RF Channel	í t					
Number		<u>Char</u>	<u>nnel 1</u>	<u>Char</u>	<u>nnel 2</u>	
PCCPCH_Ec/lor	dB	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	dB		0		0	
OCNS Ec/lor	dB	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>	5		
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-7</u>	<u>5.2</u>	<u>-75.2</u>		
PCCPCH RSCP, Note 1	dBm	<u>-73.2</u>		<u>-73.2</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		=	<u>69</u>		
Propagation condition			AV	/GN		
			Test 2			
Parameter	<u>Unit</u>	Ce		Ce	ell 2	
Timeslot Number		0	<b>DwPTS</b>	<u>0</u>	DwPTS	
UTRA RF Channel	[ [	Char	•	Char	anal 2	
Number			<u>nnel 1</u>	Channel 2		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	dB		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	dB	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>Z</u> <u>2</u>			2	
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz	<u>-5</u>	<u>7.8</u>	<u>-54.1</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-53.8</u>		<u>-55.1</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz	<u>-50</u>				
Propagation condition			A۷	/GN		
	1		Test 3			
Parameter	Unit	Ce	ell 1	Ce	ell 2	
Timeslot Number		0	<b>DwPTS</b>	0	DwPTS	
UTRA RF Channel Number	[ [		<u>nnel 1</u>	<u>Channel 2</u>		
PCCPCH_Ec/lor	dB	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	dB	<u> </u>	0	<u> </u>	0	
OCNS_Ec/lor	dB	-3		-3		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	3		<u>0</u>		
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz	<u>-98.7</u>		<u>-97</u>		
PCCPCH RSCP, Note 1	dBm	<u>-98.7</u>		<u>-100</u>		
<u>lo, Note 1</u>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-94</u>				
Propagation condition	AWGN					
NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information						
			ble parameters th			
L						

## Table A.9.8A: SFN-SFN observed time difference type 1 Inter frequency tests parameters

# A.9.1A.8.1.2 Test Requirements

The SFN-SFN observed time difference type 1 measurement accuracy shall meet the requirements in section 9.1.1.8. The rate of correct measurements observed during repeated tests shall be at least 90%.

# A.9.1A.8.2 SFN-SFN observed time difference type 2

NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements on SFN-SFN observed time difference type 2 in sections 9.1.1.8 exists.

# A.9.1A.9 Observed time difference to GSM cell

NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements in sections 9.1.1.9 exists.

# A.9.1A.10 SFN-CFN observed time difference

## A.9.1A.10.1 Test Purpose and Environment

The purpose of this test is to verify that the SFN-CFN observed time difference measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.10.

Cell 1 and cell 2 shall be synchronised. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...256 frames.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

## A.9.1A.10.1.1 Intra frequency test parameters

In this case all cells are on the same frequency. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table A.9.9A.

	Test 1					
Parameter	Unit	Ce	ell 1	Ce	II 2	
Timeslot Number		0	DwPTS	0	DwPTS	
UTRA RF Channel	Í			Chor		
Number		Char	<u>nnel 1</u>	Channel 1		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>		<u>2</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>		<u>-7</u>	<u>′6.6</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-74.6</u>		<u>-77.6</u>		
<u>lo, Note 1</u>	<u>dBm/1.2</u> 8 MHz		=	<u>69</u>		
Propagation condition			AV	VGN		
			Test 2			
Parameter	<u>Unit</u>	Ce	<u>ell 1</u>	Ce	<u>II 2</u>	
Timeslot Number	ļ	<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
UTRA RF Channel Number		<u>Char</u>	nnel 1	Channel 1		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>9</u>		2	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>		<u>-6</u>	<u>i0.2</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-54.2</u>		<u>-61.2</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		=	<u>50</u>		
Propagation condition			AV	VGN		
			Test 3			
Parameter Parameter	<u>Unit</u>	<u>Ce</u>	<u>ell 1</u>	Ce	<u>ll 2</u>	
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
<u>UTRA RF Channel</u> Number		<u>Char</u>	nnel 1	<u>Char</u>	nnel 1	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	dB		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	dB	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>		<u>3</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz	<u>-101.9</u>				
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-99.9</u>		<u>-101.9</u>		
<u>lo, Note 1</u>	<u>dBm/1.2</u> 8 MHz	<u>-94</u>				
Propagation condition	0 10112	AWGN				
NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information						
purposes. They are not settable parameters themselves.						

#### Table A.9.9A: SFN-CFN observed time difference Intra frequency test parameters

# A.9.1A.10.1.2 Inter frequency test parameters

In this case both cells are on different frequencies. The SFN-CFN observed time difference accuracy requirements in the inter-frequency case are tested by using test parameters in Table A.9.10A.

Test 1						
Parameter	Unit	Ce	ell 1	Ce	ll 2	
Timeslot Number		0	DwPTS	0	DwPTS	
UTRA RF Channel						
Number		Char	nnel 1	<u>Channel 2</u>		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>	5	5	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-7</u>	<u>5.2</u>	<u>-7</u>	<u>5.2</u>	
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-73.2</u>		<u>-73.2</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		<u>-(</u>	<u>69</u>		
Propagation condition			AM	/GN		
			Test 2			
Parameter	<u>Unit</u>	<u>Ce</u>	<u>ll 1</u>	Ce	<u>ll 2</u>	
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
UTRA RF Channel Number		<u>Char</u>	nnel 1	Channel 2		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>7</u>	1	<u>2</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-5</u>	<u>7.8</u>	<u>-54.1</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-53.8</u>		<u>-55.1</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		4	<u>50</u>		
Propagation condition			<u>AN</u>	/GN		
			Test 3			
Parameter	<u>Unit</u>	<u>Ce</u>	<u>II 1</u>	<u>Ce</u>	<u>ll 2</u>	
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
UTRA RF Channel Number		<u>Char</u>	<u>nnel 1</u>	<u>Char</u>	nel 2	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>3</u>		9	<u>)</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-98.7</u>		-9	<u>97</u>	
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-98.7</u>		<u>-100</u>		
<u>lo, Note 1</u>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-94</u>				
Propagation condition		AWGN				
	NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information					
purposes. They are not settable parameters themselves.						

### Table A.9.10A: SFN-CFN observed time difference Inter frequency tests parameters

## A.9.1A.10.2 Test Requirements

The SFN-CFN observed time difference measurement accuracy shall meet the requirements in section 9.1.1.10.

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

# A.9.1A.11 UE transmitted power

NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements in sections 9.1.1.11 exists.

R4-020974

# 3GPP TSG RAN WG4 Meeting #23 Gyeongju, Korea 13th -17th May, 2002

CHANGE REQUEST						
ж	<b>25.123</b> CR <b>219 * rev 1 *</b> Current version: <b>5.0.0 *</b>					
For <u>HELP</u> on us	sing this form, see bottom of this page or look at the pop-up text over the $#$ symbols.					
Proposed change a	affects: # (U)SIM ME/UE X Radio Access Network Core Network					
Title: ೫	Correction to TDD section 9 testing in Annex A9 for 1.28 Mcps TDD					
Source: #	RAN WG4					
Work item code: %	LCRTDD-RF Date: # 17/5/2002					
Category: ₩	ARelease: %Rel-5Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99Detailed explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5					
Reason for change	<ul> <li>Currently, test cases for UE measurement accuracy requirements in Section 9 are defined in a very general way and not on a measurement-specific basis. Additionally more details on test parameters could be given on a measurement- specific test case by measurement-specific test case basis in section A.9.1A.</li> </ul>					
Summary of chang	e: # Move of existing 1.28Mcps TDD test cases from A.9.1 to A.9.1A Introduction of subsection A.9.1A for measurement-specific test cases for P- CCPCH RSCP, CPICH RSCP, Timeslot ISCP, UTRA carrier RSSI, SFN-SFN observed time difference type 1 and SFN-CFN observed time difference measurements for 1.28Mcps Option. Test parameter tables updated.					
Consequences if not approved:	<ul> <li>Critical UE measurement accuracy requirements cannot be tested.</li> <li><u>Isolated impact analysis</u>: This CR introduces test cases for already existing critical requirements on UE measurement accuracies.</li> </ul>					
Clauses affected:	₭ A.9.1, A.9.1A (new)					
Other specs affected:	%       Other core specifications       %         X       Test specifications       34.122         O&M Specifications       O&M Specifications					
Other comments:	# Equivalent CRs in other Releases: CR218r1 cat. F to 25.123 v4.4.0					

How to create CRs using this form:

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

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

# A.9.1 Measurement Performance for UE

If not otherwise stated, in this clause the test parameters in table A.9.1 should be applied for 3.84 Mcps TDD UE RX measurements requirements and the test parameters in table A.9.1A should be applied for 1.28 Mcps TDD UE RX measurements requirements.

# A.9.1.1 TDD intra frequency measurements

#### A.9.1.1.1 3.84 Mcps TDD option

In this case all cells are on the same frequency. The table A.9.1 and notes 1-5 define the limits of signal strengths and code powers, where the requirement is applicable.

Table A.9.1 Intra frequency test parameters	for UE RX Measurements
---------------------------------------------	------------------------

Parameter	Unit	Cell 1		Ce	ll 2
UTRA RF Channel number		Channel 1		Channel 1	
Timeslot		0	8	0	8
P-CCPCH Ec/lor	dB	-3	-3 -		-
SCH Ec/lor	dB	-9 -9		-9	-9
PICH_Ec/lor	dB	-	-3	-	-3
OCNS	dB	-4,28	-4,28	-4,28	-4,28
Îor/loc	dB	[	]	[	]
loc	dBm/ 3,84 MHz	-7	70	-70	
Range 1:lo	dBm	-9470		-9470	
Range 2: lo	UDIII	-9450		-9450	
Propagation condition	-	AW	/GN	AWGN	

- Note 1: P- $CCPCH_RSCP1, 2 \ge -[102]$  dBm.
- Note 2:  $|P-CCPCH_RSCP1 PCCPCH_RSCP2| \le 20 \text{ dB}.$
- Note 3: | Io P-CCPCH\_Ec/Ior $| \leq [20]$  dB.
- Note 4: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.
- Note 5: The DPCH of all cells are located in an other timeslot than 0 or 8

#### A.9.1.1.2 1.28 Mcps TDD option

If not otherwise stated, the test parameters in table A.9.1A should be applied for UE RX measurements requirements in this section.

Table A 91A Intra free	woncy tost i	narameters for LIF	RY Mossurements
Tuble A. S. A. III. III.	uchey test		TA measurements

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		<del>(</del>	•	Dwl	<del>2TS</del>	Ð		Dwl	<del>2TS</del>
		<del>T1</del>	<del>T2</del>	<del>T1</del>	<del>T2</del>	<b>T1</b>	<del>T2</del>	<del>T1</del>	<del>T2</del>
UTRA RF Channel Number		Channel 1			Channel 2				
PCCPCH_Ec/lor	d₿	-3		-3					
DwPCH_Ec/lor	d₿		<del>Q</del>				θ		
$\frac{\hat{I}_{or}}{I_{oc}}$	d₿	<del>-[3]</del>	<del>[3]</del>			-Infinity	<del>[6]</del>		
-I <sub>oc</sub>	<del>dBm/1.</del> <del>28 MHz</del>	- <del>70</del>							
<del>Range 1:lo</del> <del>Range 2:lo</del>	dBm	<del>-9470</del> <del>-9450</del>			<del>-9470</del> <del>-9450</del>				
Propagation condition					AWGN				

 Note 1:
 P CCPCH\_RSCP1,2 ≥ [102] dBm.

 Note 2:
 / P CCPCH\_RSCP1 – PCCPCH\_RSCP2 /≤ 20 dB.

 Note 3:
 / Io – P CCPCH\_RSCP/ ≤ [20] dB.

 Note 4:
 Ioc level shall be adjusted according the total signal power Io at receiver input and the geometry factor Îor/Ioc.

 Note 5:
 The DPCH of all cells are located in a timeslot other than 0

# A.9.1.2 TDD inter frequency measurements

### A.9.1.2.1 3.84 Mcps TDD option

In this case all cells are on the same frequency. The table A.9.2 and notes 1-5 define the limits of signal strengths and code powers, where the requirement is applicable.

Parameter	Unit	Cell 1		Cell 2	
UTRA RF Channel number		Channel 1		Channel 2	
Timeslot		0	8	0	8
P-CCPCH Ec/lor	dB	-3	-	-3	-
SCH Ec/lor	dB	-9	-9	-9	-9
PICH_Ec/lor	dB	-	-3	-	-3
OCNS	dB	-4,28	-4,28	-4,28	-4,28
Îor/loc	dB	[	]	[	]
loc	dBm/ 3,84 MHz	-7	70	-70	
Range 1:lo	dBm	-9470		-9470	
Range 2: lo	UDIII	-9450		-9450	
Propagation condition	-	AW	'GN	AW	/GN

- Note 1: P- $CCPCH_RSCP1, 2 \ge -[102]$  dBm.
- Note 2: / P-CCPCH\_RSCP1 PCCPCH\_RSCP2  $\leq 20 \text{ dB}$ .
- Note 3: | Io P-CCPCH\_Ec/Ior $| \leq [20] dB$ .
- Note 4: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.
- Note 5: The DPCH of all cells are located in an other timeslot than 0 or 8

#### A.9.1.2.2 1.28 Mcps TDD option

If not otherwise stated, the test parameters in table A. 9.2A should be applied for UE RX measurements requirements in this section.

Parameter	Unit	Cell 1				<del>C</del> e	<del>   2</del>		
Timeslot Number		<del>(</del>	<del>)</del>	Dwl	<u>2TS</u>	0		DwPTS	
		<del>1</del> 1	<del>T2</del>	<del>1</del> 4	<del>T2</del>	<b>T1</b>	<del>T2</del>	<del>T1</del>	<del>T2</del>
UTRA RF Channel Number		Channel 1			Channel 2				
PCCPCH_Ec/lor	₿	-3		-3					
DwPCH_Ec/lor	d₿	<del>Q</del>				Ð			
$\frac{\hat{I}_{or}}{I_{oc}}$	dB	<del>-[3]</del>	<del>[3]</del>			-Infinity	<del>[6]</del>		
-I <sub>oc</sub>	<del>dBm/1.</del> <del>28 MHz</del>	-70							
<del>Range 1:lo</del> <del>Range 2:lo</del>	dBm	<del>-9470</del> <del>9450</del>			<del>-9470</del> <del>-9450</del>				
Propagation condition					AWGN				

#### Table A. 9.2A: Intra frequency test parameters for UE RX Measurements

#### Note 1: P CCPCH\_RSCP1, $2 \ge [102]$ dBm.

Note 2: / *P-CCPCH\_RSCP1* – *PCCPCH\_RSCP2* |≤ 20 dB.

Note 3:  $|I_0 P CCPCH_RSCP1, 2| \leq [20] dB$ .

Note 4: *loc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.

Note 5: The DPCH of all cells are located in a timeslot other than 0

## A.9.1.3 FDD inter frequency measurements

#### A.9.1.3.1 3.84 Mcps TDD option

In this case both cells are in different frequency. Table A.9.3 and notes 1-6 define the limits of signal strengths and code powers, where the requirement is applicable.

Parameter	Unit	Cell 1		Cell 2
Timeslot Number		0	8	n.a
UTRA RF Channel Number		Chan	nel 1	Channel 2
CPICH_Ec/lor	dB	n.a.	n.a.	-10
P-CCPCH_Ec/lor	dB	-3		-12
SCH_Ec/lor	dB	-9	-9	-12
SCH_t <sub>offset</sub>		0	0	n.a.
PICH_Ec/lor			-3	-15
DPCH_Ec/lor	dB	n.a.	n.a.	-15
OCNS	dB	-4.28	-4.28	-1,11
$\hat{I}_{or}/I_{oc}$	dB	0	[]	10,5
$I_{oc}$	dBm/3,84 MHz	-70		Note 5
Range 1:lo Range 2: lo	dBm	-9470 -9450		-9470 -9450
Propagation condition	-	AW		AWGN

#### Table A.9.3 CPICH Inter frequency test parameters

- Note 1:  $CPICH_RSCP1, 2 \ge -114 \text{ dBm}.$
- Note 2:  $/ CPICH_RSCP1 CPICH_RSCP2 / \le 20 \text{ dB}$
- Note 3: / Channel 1\_Io –Channel 2\_Io/  $\leq$  20 dB
- Note 4:  $/ Io CPICH\_Ec/Ior / \le 20 \text{ dB}$

- Note 5: *Ioc* level shall be adjusted in each carrier frequency according the total signal power *Io* at receiver input and the geometry factor  $\hat{Ior}/Ioc$ . *Io* -10,6 dB = Ioc
- Note 6: The DPCH of the TDD cell is located in an other timeslot than 0 or 8

### A.9.1.4 UTRA carrier RSSI inter frequency measurements

#### A.9.1.4.1 3.84 Mcps TDD option

The table A.9.4 and notes 1,2 define the limits of signal strengths, where the requirement is applicable.

#### Table A.9.4: UTRA carrier RSSI Inter frequency test parameters

	Parameter	Unit	Cell 1	Cell 2		
UTRA	RF Channei number	-	Channel 1	Channel 2		
	Îor/loc	dB	-1	-1		
loc		dBm/ 3.84 MHz	Note 2	Note 2		
	Range 1: lo	dBm/ 3,84 MHz	-9470	-9470		
	Range 2: lo		-9450	-9450		
Pro	pagation condition	-	AWGN			
Note 1: For relative accuracy requirement   Channel 1_Io –Channel 2_Io   < 20 dB.						
Note 2: <i>loc</i> level shall be adjusted according the total signal power <i>lo</i> at receiver input and the						
geometry factor <i>Îor/loc</i> .						

### A.9.1.4.2 1.28 Mcps TDD option

The table A.9.4A and notes 1,2 define the limits of signal strengths, where the requirement is applicable.

#### Table A.9.4A: UTRA carrier RSSI Inter frequency test parameters

Parameter	Unit	Cell 1	Cell 2			
UTRA RF Channei number	-	Channel 1	Channel 2			
Îor/loc	DB	-1	-4			
loc	dBm/1.28 MHz	Note 2	Note 2			
Range 1: lo	dBm/1.28 MHz	<del>-9470</del>	<del>-9470</del>			
Range 2: lo		<del>-9450</del>	<del>-9450</del>			
Propagation condition	-	AWGN				
Note 1: For relative accuracy requirement / Channel 1_Io - Channel 2_Io / < 20 dB.						
Note 2: /oc level shall be adjusted according the total signal power /o at receiver input and						
the geometry factor lor/loc.						

# A.9.1A Measurement Performance for UE for 1.28 Mcps TDD

# A.9.1A.1 P-CCPCH RSCP

#### A.9.1A.1.1 Test Purpose and Environment

The purpose of this test is to verify that the P-CCPCH RSCP measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.1.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

#### A.9.1A.1.1.1 Intra frequency test parameters

Both P-CCPCH RSCP intra frequency absolute and relative accuracy requirements are tested by using test parameters in Table A.9.1A.

			Test 1			
Parameter	Unit	Ce	ell 1	Ce	ell 2	
Timeslot Number		0	DwPTS	0	DwPTS	
UTRA RF Channel	ĺ					
Number		<u>Channel 1</u>		Char	nnel 1	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>		<u>2</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>		<u>-7</u>	<u>′6.6</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-74.6</u>		<u>-77.6</u>		
lo, Note 1	<u>dBm/1.2</u> <u>8 MHz</u>			<u>69</u>		
Propagation condition				<u>VGN</u>		
			Test 2	1		
Parameter Parameter	<u>Unit</u>		<u>ell 1</u>		<u>ll 2</u>	
Timeslot Number	]	<u>0</u>	<u>DwPTS</u>	<u>0</u>	DwPTS	
UTRA RF Channel Number		Char	nnel 1	Char	nnel 1	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>9</u>		<u>2</u>	
Ioc	<u>dBm/1.2</u> <u>8 MHz</u>		<u>-6</u>	<u>80.2</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-54.2</u>		<u>-61.2</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		2	<u>50</u>		
Propagation condition			AV	<u>VGN</u>		
			Test 3			
Parameter	<u>Unit</u>		<u>ell 1</u>	Ce	<u>ll 2</u>	
Timeslot Number	ļ	<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
UTRA RF Channel Number		<u>Char</u>	nnel 1	<u>Char</u>	nnel 1	
PCCPCH Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>	1	<u>3</u>	
Ioc	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-101.9</u>				
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-99.9</u>		<u>-101.9</u>		
<u>lo, Note 1</u>	<u>dBm/1.2</u> 8 MHz		- <u>-94</u>			
Propagation condition			AV	VGN		
NOTE 1: PCCPCH R	SCP and lo	levels have bee			s for information	
			ble parameters t			

#### Table A.9.1A: P-CCPCH RSCP Intra frequency test parameters

A.9.1A.1.1.2 Inter frequency test parameters

P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in Table A.9.2A.

			Toot 1			
Parameter	Unit	Ce	<u>Test 1</u> ell 1	Ce	II 2	
Timeslot Number	<u></u>	0	DwPTS	0	DwPTS	
UTRA RF Channel						
Number		<u>Char</u>	<u>nnel 1</u>	<u>Char</u>	inel 2	
PCCPCH_Ec/lor	dB	-3		<u>-3</u>		
DwPCH_Ec/lor	dB		0		0	
OCNS Ec/lor	dB	-3	_	<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>		5	
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz	<u>-7</u>	<u>5.2</u>	<u>-7</u> !	5.2	
PCCPCH RSCP, Note 1	dBm	<u>-73.2</u>		<u>-73.2</u>		
<u>lo, Note 1</u>	<u>dBm/1.2</u> 8 MHz		<u>-</u>	<u>69</u>		
Propagation condition			AM	/GN		
			Test 2			
Parameter	<u>Unit</u>	<u>Ce</u>	ell 1	Ce	<u>II 2</u>	
Timeslot Number		<u>0</u>	DwPTS	<u>0</u>	DwPTS	
UTRA RF Channel Number		Char	nnel 1	Char	inel 2	
PCCPCH_Ec/lor	dB	-3		-3		
DwPCH Ec/lor	dB	<u> </u>	0	<u> </u>	0	
OCNS Ec/lor	dB	<u>-3</u>	<u> </u>	<u>-3</u>	<u> </u>	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u> </u>			2	
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz	<u>-5</u>	<u>7.8</u>	<u>-54.1</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-53.8</u>		<u>-55.1</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz			<u>50</u>		
Propagation condition			AW	/GN		
			Test 3			
Parameter Parameter	<u>Unit</u>	<u>Ce</u>	ell 1	Ce	<u>ll 2</u>	
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
<u>UTRA RF Channel</u> Number		<u>Char</u>	nnel 1	<u>Char</u>	nel 2	
PCCPCH_Ec/lor	dB	-3		<u>-3</u>		
DwPCH_Ec/lor	dB		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	dB	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	dB		<u>3</u>	(	<u>)</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-98.7</u>		<u>-9</u>	97	
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-98.7</u>		<u>-100</u>		
<u>lo, Note 1</u>	<u>dBm/1.2</u> 8 MHz	<u>-94</u>				
Propagation condition			AM	/GN		
NOTE 1: PCCPCH R	SCP and lo	levels have been			for information	
			ble parameters th			

#### Table A.9.2A: P-CCPCH RSCP Inter frequency tests parameters

# A.9.1A.1.2 Test Requirements

The P-CCPCH RSCP measurement accuracy shall meet the requirements in section 9.1.1.1.

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

# A.9.1A.2 CPICH measurements

## A.9.1A.2.1 CPICH RSCP

#### A.9.1A.2.1.1 Test Purpose and Environment

The purpose of this test is to verify that the CPICH RSCP measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.2 and applies to UE's supporting this capability.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

#### A.9.1A.2.1.1.1 Inter frequency test parameters

Cell 1 is a UTRA TDD cell and cell 2 is a UTRA FDD cell.

CPICH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table A.9.3A.

#### Table A.9.3A: CPICH RSCP Inter frequency tests parameters

Peremeter	Unit		Tes	st 1		Test 2		
<u>Parameter</u>	<u>Unit</u>	<u>Ce</u>	<u>   1</u>	<u>Cell 2</u>	<u>Ce</u>	ell 1	Cell 2	
DL timeslot number		<u>0</u>	DwP TS	<u>n.a.</u>	<u>0</u>	DwP TS	<u>n.a.</u>	
UTRA RF Channel number		Char	nel <u>1</u>	Channel 2	Char	nnel <u>1</u>	Channel 2	
CPICH_Ec/lor	<u>dB</u>	<u>n.</u>	<u>a.</u>	<u>-10</u>	<u>n</u>	. <u>a.</u>	<u>-10</u>	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-12</u>	<u>-3</u>		<u>-12</u>	
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>	<u>n.a.</u>		<u>0</u>	<u>n.a.</u>	
SCH_Ec/lor	<u>dB</u>	<u>n.</u>	<u>a.</u>	<u>-12</u>	<u>n</u>	. <u>a.</u>	<u>-12</u>	
PICH_Ec/lor	<u>dB</u>		<u>a.</u>	<u>-15</u>	<u>n</u>	. <u>a.</u>	<u>-15</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-0.94</u>	<u>-3</u>		<u>-0.94</u>	
loc, Note 2	<u>dBm/ 3.84</u> <u>MHz</u>	<u>n.</u>	<u>a.</u>	<u>-60</u>	<u>n</u>	<u>.a.</u>	<u>-84</u>	
loc, Note 2	<u>dBm/ 1.28</u> <u>MHz</u>	<u>-5</u>	7.7	<u>n.a.</u>	<u>-8</u>	<u>4.7</u>	<u>n.a.</u>	
Îor/loc	<u>dB</u>		<u>7</u>	<u>9.54</u>		<u>3</u>	<u>0</u>	
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-53.7</u>		<u>n.a.</u>	<u>-</u> 84.7		<u>n.a.</u>	
CPICH RSCP, Note 1	<u>dBm</u>	<u>n</u> .	<u>a.</u>	<u>-60.46</u>	<u>n</u>	. <u>a.</u>	<u>-94</u>	
<u>lo, Notes 1, 2</u>	<u>dBm/3.84</u> <u>MHz</u>	<u>n.</u>	<u>a.</u>	<u>-50</u>	<u>n</u>	<u>.a.</u>	<u>-81</u>	
<u>lo, Notes 1, 2</u>	<u>dBm/1.28</u> <u>MHz</u>	<u>-5</u>	<u>50</u>	<u>n.a.</u>	<u>-</u> {	<u>30</u>	<u>n.a.</u>	
Propagation condition			AW			AW		
NOTE 1: PCCPCH RSCP, CF	PICH RSCP and	lo levels	s have b	een calculated f	rom oth	er parar	neters for	
information purpose					<u>.</u>			
NOTE 2: loc and lo are given	independently for	or TDD a	and FDD	<u>) cells.</u>				

#### A.9.1A.2.1.2 Test Requirements

The CPICH RSCP measurement accuracy shall meet the requirements in section 9.1.1.2.

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

A.9.1A.2.2 CPICH Ec/lo

# NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements in sections 9.1.1.3 exists.A.9.1A.3 Timeslot ISCP

## A.9.1A.3.1 Test Purpose and Environment

The purpose of this test is to verify that the Timeslot ISCP measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.3.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

### A.9.1A.3.1.1 Intra frequency test parameters

The Timeslot ISCP intra frequency absolute accuracy requirements are tested by using test parameters in Table A.9.4A.

			Test 1			
<b>Parameter</b>	Unit	<u>C</u>	ell 1	<u>C</u>	ell 2	
Timeslot Number		<u>0</u>	DwPTS	<u>0</u>	DwPTS	
UTRA RF Channel		Chr	annel 1	Channel 1		
<u>Number</u>		<u>Channel 1</u>				
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>		<u>2</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>		<u>-7</u>	<u>′6.6</u>		
TS ISCP, Note 1	dBm	-74.6		-71.6		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		-	<u>69</u>		
Propagation condition			AV	VGN		
			Test 2			
Parameter	Unit	C	ell 1	Ce	ell 2	
Timeslot Number		0	DwPTS	0	DwPTS	
UTRA RF Channel				0.		
Number		Cha	annel 1	<u>Channel 1</u>		
PCCPCH_Ec/lor	dB	-3		-3		
DwPCH_Ec/lor	dB		0		0	
OCNS_Ec/lor	dB	-3	_	-3		
$\hat{I}_{or}/I_{oc}$	dB	<u>9</u>		2		
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz		<u>-6</u>	<u>60.2</u>		
TS ISCP, Note 1	dBm	-58.2		-51.2		
<u>lo, Note 1</u>	<u>dBm/1.2</u> 8 MHz			<u>50</u>	1	
Propagation condition	0.11112		AV	VGN		
<u>r ropagatori conditori</u>			Test 3			
Parameter	Unit	C	cell 1	Ce	ell 2	
Timeslot Number		0	DwPTS	0	DwPTS	
UTRA RF Channel	( F		· · · · · · · · · · · · · · · · · · ·			
Number		<u>Cha</u>	annel 1	<u>Cha</u>	nnel 1	
PCCPCH_Ec/lor	dB	-3		-3		
DwPCH_Ec/lor	dB		0		0	
OCNS Ec/lor	dB	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	dB		<u>5</u>		3	
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz		<u>-1</u>	01.9		
TS ISCP, Note 1	dBm	<u>-98.9</u>		<u>-96.9</u>		
<u>lo, Note 1</u>	<u>dBm/1.2</u> 8 MHz	<u>-90.9</u>				
Propagation condition			AV	VGN		
NOTE 1: TS ISCF	and to levels	have been o			r information	
			able parameters t			

#### Table A.9.4A: Timeslot ISCP Intra frequency test parameters

# A.9.1A.3.2 Test Requirements

The Timeslot ISCP measurement accuracy shall meet the requirements in section 9.1.1.3. The rate of correct measurements observed during repeated tests shall be at least 90%.

# A.9.1A.4 UTRA carrier RSSI

#### A.9.1A.4.1 Test Purpose and Environment

The purpose of this test is to verify that the UTRA Carrier RSSI measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.4.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

#### A.9.1A.4.1.1 Inter frequency test parameters

Both UTRA Carrier RSSI absolute and relative accuracy requirements are tested by using test parameters in Table <u>A.9.5A.</u>

	Test 1						
Parameter	Unit	Ce	<u>10301</u>	C	Cell 2		
Timeslot Number		0	DwPTS	0	DwPTS		
UTRA RF Channel		Channel 1					
Number		Char	<u>nnel 1</u>	Cha	annel 2		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>			
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>		
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>			
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>		<u>5</u>		
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz	<u>-7</u>	<u>5.2</u>	E	<u>75.2</u>		
lo Noto 1	dBm/1.2			60			
lo, Note 1	<u>8 MHz</u>			<u>69</u>			
Propagation condition				<u>/GN</u>			
			Test 2				
Parameter	<u>Unit</u>				ell 2		
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>		
UTRA RF Channel Number		<u>Char</u>	<u>nnel 1</u>	<u>Channel 2</u>			
PCCPCH_Ec/lor	dB	-3		-3			
DwPCH_Ec/lor	dB		0		0		
OCNS_Ec/lor	dB	-3	<u> </u>	-3	<u> </u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		7	2			
Ioc	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-5</u>	<u>7.8</u>	<u>-54.1</u>			
lo, Note 1	<u>dBm/1.2</u> 8 MHz		4	<u>50</u>			
Propagation condition			AM	/GN			
			Test 3				
Parameter Parameter	<u>Unit</u>		<u>ll 1</u>		ell 2		
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>		
UTRA RF Channel Number		<u>Char</u>	<u>nnel 1</u>	<u>Cha</u>	annel 2		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>			
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>		
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>			
$\underline{\hat{I}_{or}/I_{oc}}$	<u>dB</u>		<u>3</u>		<u>0</u>		
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-98.7</u> <u>-97</u>			<u>-97</u>		
<u>lo, Note 1</u>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-94</u>					
Propagation condition				<u>/GN</u>			
NOTE 1: lo levels ha					poses. They are		
	no	t settable param	eters themselves	<u>.</u>			

#### Table A.9.5A: UTRA Carrier RSSI Inter frequency tests parameters

## A.9.1A.4.2 Test Requirements

The UTRA Carrier RSSI absolute measurement accuracy shall meet the requirements in section 9.1.1.4.

The UTRA Carrier RSSI relative measurement accuracy shall meet the requirements in Table A.9.6A by taking into account the effect of thermal noise and noise added by the receiver.

#### Table A.9.6A: UTRA Carrier RSSI relative accuracy

		Accura	<b>Conditions</b>	
Parameter	<u>Unit</u>	Normal condition	Extreme condition	<u>lo [dBm/1.28</u> <u>MHz]</u>
	<u>dBm</u>	<u>-45.2</u>	<u>-78.2</u>	<u>-9487</u>
UTRA Carrier RSSI	<u>dBm</u>	<u>± 4</u>	<u>± 7</u>	<u>-8770</u>
	<u>dBm</u>	<u>± 6</u>	± 9	<u>-7050</u>

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

# A.9.1A.5 GSM carrier RSSI

NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements in sections 9.1.1.5 exists.

# <u>A.9.1A.6 SIR</u>

NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements in sections 9.1.1.6 exists.

# A.9.1A.7 Transport channel BLER

NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements in sections 9.1.1.7 exists.

# A.9.1A.8 SFN-SFN observed time difference

### A.9.1A.8.1 SFN-SFN observed time difference type 1

A.9.1A.8.1.1 Test Purpose and Environment

The purpose of this test is to verify that the SFN-SFN observed time difference type 1 measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.8.

<u>Cell 1 and cell 2 shall be synchronised. During the test, the timing difference between cell 1 and cell 2 can be set to valid values in the range 0...3276800 chip.</u>

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

### A.9.1A.8.1.1.1 Intra frequency test parameters

In this case all cells are on the same frequency. The SFN-SFN observed time difference type 1 accuracy requirements in the intra-frequency case are tested by using test parameters in Table A.9.7A.

	Test 1					
Parameter	Unit	Ce	ell 1	Ce	ll 2	
Timeslot Number		0	DwPTS	0	DwPTS	
UTRA RF Channel	Í	Char	Channel 1 Channel 1			
Number		Char	nnel 1	Chan	inel 1	
PCCPCH_Ec/lor	dB	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	dB		0		0	
OCNS_Ec/lor	dB	<u>-3</u>		<u>-3</u>	_	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>		2	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>		<u>-7</u>	6.6		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-74.6</u>		<u>-77.6</u>		
lo, Note 1	<u>dBm/1.2</u> <u>8 MHz</u>		=	<u>69</u>		
Propagation condition				<u>VGN</u>		
			Test 2			
Parameter Parameter	<u>Unit</u>	Ce	<u>ell 1</u>	<u>Ce</u>		
Timeslot Number		0	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
UTRA RF Channel		Char	nnel 1	Chan	nel 1	
Number				Channel 1		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>9</u> <u>2</u>				
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>		<u>-6</u>	<u>0.2</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-54.2</u>		<u>-61.2</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		=	<u>50</u>		
Propagation condition			AV	VGN		
			Test 3			
Parameter	Unit	Ce	ell 1	Ce	II <u>2</u>	
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<b>DwPTS</b>	
UTRA RF Channel Number		Char	nnel 1	<u>Chan</u>	inel 1	
PCCPCH_Ec/lor	dB	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	dB		0		0	
OCNS_Ec/lor	dB	-3	_	-3	_	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>		<u>3</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> 8 MHz		<u>-1</u>	<u>01.9</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-99.9</u>		<u>-101.9</u>		
<u>lo, Note 1</u>	<u>dBm/1.2</u> 8 MHz	<u>-94</u>				
Propagation condition	<u><u> </u></u>	AWGN				
NOTE 1: PCCPCH R	SCP and lo	levels have been			for information	
			ible parameters t			
L		ity are not botto		10111001100.		

### Table A.9.7A: SFN-SFN observed time difference type 1 Intra frequency test parameters

## A.9.1A.8.1.1.2 Inter frequency test parameters

The SFN-SFN observed time difference type 1 accuracy requirements in the inter-frequency case are tested by using test parameters in Table A.9.8A.

	Test 1					
Parameter	Unit	Ce	ell 1	Ce	ll 2	
Timeslot Number		0	DwPTS	0	DwPTS	
UTRA RF Channel	Í	Char		Char		
Number		Char	<u>nnel 1</u>	Char	nel 2	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>	<u> </u>	5	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-7</u>	<u>5.2</u>	<u>-7</u> !	<u>5.2</u>	
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-73.2</u>		<u>-73.2</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		_	<u>69</u>		
Propagation condition			A۷	VGN		
			Test 2			
Parameter	<u>Unit</u>	Ce	<u>   1</u>	Ce	<u>II 2</u>	
Timeslot Number		<u>0</u>	<b>DwPTS</b>	<u>0</u>	DwPTS	
UTRA RF Channel	Í	Char	nnel 1	Char	unol 2	
<u>Number</u>				Channel 2		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\underline{\hat{I}_{or}/I_{oc}}$	<u>dB</u>		7	4	2	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-5</u>	<u>7.8</u>	<u>-54.1</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-53.8</u>		<u>-55.1</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		-	<u>50</u>		
Propagation condition			AV	VGN		
			Test 3			
Parameter	Unit	<u>Ce</u>		Ce	<u>ll 2</u>	
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
UTRA RF Channel Number		<u>Char</u>	nnel 1	<u>Char</u>	nel 2	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	dB		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	dB	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>3</u>	(	<u>)</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-9</u>	<u>8.7</u>	<u>-9</u>	<u>97</u>	
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-98.7</u>		<u>-100</u>		
<u>lo, Note 1</u>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-94</u>				
Propagation condition			A۷	VGN		
NOTE 1: PCCPCH R	SCP and lo	levels have bee			for information	
			ble parameters th			
۱ <u>ــــــــــــــــــــــــــــــــــــ</u>						

### Table A.9.8A: SFN-SFN observed time difference type 1 Inter frequency tests parameters

### A.9.1A.8.1.2 Test Requirements

The SFN-SFN observed time difference type 1 measurement accuracy shall meet the requirements in section 9.1.1.8. The rate of correct measurements observed during repeated tests shall be at least 90%.

### A.9.1A.8.2 SFN-SFN observed time difference type 2

NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements on SFN-SFN observed time difference type 2 in sections 9.1.1.8 exists.

## A.9.1A.9 Observed time difference to GSM cell

NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements in sections 9.1.1.9 exists.

# A.9.1A.10 SFN-CFN observed time difference

### A.9.1A.10.1 Test Purpose and Environment

The purpose of this test is to verify that the SFN-CFN observed time difference measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.1.10.

Cell 1 and cell 2 shall be synchronised. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...256 frames.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

#### A.9.1A.10.1.1 Intra frequency test parameters

In this case all cells are on the same frequency. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table A.9.9A.

	Test 1					
Parameter	Unit	Ce	ell 1	Ce	2	
Timeslot Number		0	DwPTS	0 DwPTS		
UTRA RF Channel		Char	Channel 1 Channel 1			
<u>Number</u>						
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\underline{\hat{I}_{or}/I_{oc}}$	<u>dB</u>		<u>5</u>	2	2	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>		-7	<u>′6.6</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-74.6</u>		<u>-77.6</u>		
lo, Note 1	<u>dBm/1.2</u> <u>8 MHz</u>		2	<u>69</u>		
Propagation condition				<u>VGN</u>		
			Test 2			
Parameter	<u>Unit</u>		<u>ell 1</u>	<u>Ce</u>		
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
UTRA RF Channel Number		<u>Char</u>	nnel 1	<u>Chan</u>	inel 1	
PCCPCH_Ec/lor	dB	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\underline{\hat{I}_{or}}/I_{oc}$	<u>dB</u>	<u>9</u> <u>2</u>				
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>		<u>-6</u>	<u>60.2</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-54.2</u>		<u>-61.2</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		=	<u>50</u>		
Propagation condition			AV	VGN		
			<u>Test 3</u>			
Parameter	<u>Unit</u>	<u>Ce</u>	ell 1	Ce	<u>   2</u>	
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
UTRA RF Channel Number		<u>Char</u>	nnel 1	<u>Chan</u>	inel 1	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>	3	<u>3</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>		<u>-1</u>	<u>01.9</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-99.9</u>		<u>-101.9</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz	<u>-94</u>				
Propagation condition		AWGN				
NOTE 1: PCCPCH R	SCP and lo	levels have bee			for information	
			ble parameters t			

#### Table A.9.9A: SFN-CFN observed time difference Intra frequency test parameters

# A.9.1A.10.1.2 Inter frequency test parameters

In this case both cells are on different frequencies. The SFN-CFN observed time difference accuracy requirements in the inter-frequency case are tested by using test parameters in Table A.9.10A.

			Test 1			
Parameter	Unit	Ce	Cell 1 Cell 2			
Timeslot Number		0	DwPTS	0	DwPTS	
UTRA RF Channel				Channel 2		
Number		Char	nnel 1	Char	<u>inel 2</u>	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>5</u>	5	5	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-7</u>	<u>5.2</u>	<u>-7</u> !	<u>5.2</u>	
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-73.2</u>		<u>-73.2</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		<u>-(</u>	<u>69</u>		
Propagation condition			AM	/GN		
			Test 2			
Parameter	<u>Unit</u>	Ce	<u>ll 1</u>	Ce	<u>   2</u>	
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
UTRA RF Channel Number		<u>Char</u>	nnel 1	Channel 2		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		Z			
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-5</u>	<u>7.8</u>	<u>-54.1</u>		
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-53.8</u>		<u>-55.1</u>		
lo, Note 1	<u>dBm/1.2</u> 8 MHz		4	<u>50</u>		
Propagation condition			<u>AN</u>	/GN		
			Test 3			
Parameter	<u>Unit</u>	<u>Ce</u>	<u>II 1</u>	Ce	<u>II 2</u>	
Timeslot Number		<u>0</u>	<u>DwPTS</u>	<u>0</u>	<u>DwPTS</u>	
UTRA RF Channel Number		<u>Char</u>	<u>nnel 1</u>	<u>Char</u>	nel 2	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
DwPCH_Ec/lor	<u>dB</u>		<u>0</u>		<u>0</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>		<u>-3</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>3</u>	<u>(</u>	<u>)</u>	
I <sub>oc</sub>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-98.7</u>		<u>-9</u>	<u>97</u>	
PCCPCH RSCP, Note 1	<u>dBm</u>	<u>-98.7</u>		<u>-100</u>		
<u>lo, Note 1</u>	<u>dBm/1.2</u> <u>8 MHz</u>	<u>-94</u>				
Propagation condition			AM	/GN		
NOTE 1: PCCPCH R	SCP and lo	levels have been			for information	
			ble parameters th			

### Table A.9.10A: SFN-CFN observed time difference Inter frequency tests parameters

## A.9.1A.10.2 Test Requirements

The SFN-CFN observed time difference measurement accuracy shall meet the requirements in section 9.1.1.10.

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

# A.9.1A.11 UE transmitted power

NOTE: This section is included for consistency with numbering in section 9, currently no test covering requirements in sections 9.1.1.11 exists.