TSG RAN Meeting #15

Cheju, Korea, 5 - 8 March 2002

Title:CRs (R'99 and Rel-4 Category A) to TS 25.123 (1)

Source: TSG RAN WG4

Agenda Item: 7.4.3

RAN4	Spec	CR	Rev	Phase	Title	Cat	Curr	New
Tdoc							Ver	Ver
R4-020013	25.123	142		R99	Corrections to Section 9	F	3.8.0	3.9.0
R4-020027	25.123	156		Rel-4	Corrections to Section 9	Α	4.3.0	4.4.0
R4-020014	25.123	143		R99	Removal of section 6 on DCA	F	3.8.0	3.9.0
R4-020028	25.123	157		Rel-4	Removal of section 6 on DCA	Α	4.3.0	4.4.0
R4-020015	25.123	144		R99	Requirements on UE TS ISCP measurement	F	3.8.0	3.9.0
R4-020029	25.123	158		Rel-4	Requirements on UE TS ISCP measurement	Α	4.3.0	4.4.0
R4-020017	25.123	146		R99	Corrections to reporting requirements in CELL_FACH state	F	3.8.0	3.9.0
R4-020031	25.123	159		Rel-4	Corrections to reporting requirements in CELL_FACH state	Α	4.3.0	4.4.0
R4-020021	25.123	150		R99	Corrections to Timing Advance requirements	F	3.8.0	3.9.0
R4-020047	25.123	162		Rel-4	Corrections to Timing Advance requirements	А	4.3.0	4.4.0
R4-020023	25.123	152		R99	Correction of OCNS level settings in Annex A test cases	F	3.8.0	3.9.0
R4-020049	25.123	164		Rel-4	Correction of OCNS level settings in Annex A test cases	А	4.3.0	4.4.0
R4-020388	25.123	141	1	R99	Introduction TDD/TDD Handover Test Cases	F	3.8.0	3.9.0
R4-020389	25.123	155	1	Rel-4	Introduction TDD/TDD Handover Test Cases	Α	4.3.0	4.4.0
R4-020390	25.123	148	1	R99	Introduction TDD/FDD Handover Test Case	F	3.8.0	3.9.0
R4-020391	25.123	160	1	Rel-4	Introduction TDD/FDD Handover Test Case	А	4.3.0	4.4.0
R4-020398	25.123	151	1	R99	Introduction of Timing Advance Test Case	F	3.8.0	3.9.0
R4-020399	25.123	163	1	Rel-4	Introduction of Timing Advance Test Case	Α	4.3.0	4.4.0

RP-020018

3GPP TSG RAN WG4 Meeting #21

R4-020388

Sophia Antipolis, France 28th January - 1st February 2002

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A.5 UTRAN Connected Mode Mobility

A.5.1 TDD/TDD Handover

NOTE: This section is included for consistency with numbering with section 5; currently no test covering requirements in sections 5.1.2.1 and 5.1.2.2 exists.

A.5.1.1 Handover to intra-frequency cell

A.5.1.1.1 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 reported in section 5.1.2.1.

The test parameters are given in Table A.5.1 and A.5.1A below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH 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 message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 12.

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 Control			<u>On</u>	
Target quality DTCH	value on	<u>BLER</u>	<u>0.01</u>	
Initial	Active cell		<u>Cell 1</u>	
conditions	<u>Neighbour</u> <u>cell</u>		<u>Cell 2</u>	
Final condition	inal <u>Active cell</u> ondition		<u>Cell 2</u>	
HCS			Not used	
<u>0</u>		<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be used for all cells in the test.
<u>Hysteresis</u>		<u>dB</u>	<u>0</u>	
Time to Trigge	er	ms	<u>0</u>	
Filter coefficie	<u>nt</u>		<u>0</u>	
Monitored cell	list size		6 TDD neighbours on Channel 1	
<u>T1</u>		<u>s</u>	<u>10</u>	
<u>T2</u>		<u>s</u>	<u>10</u>	
<u>T3</u>		<u>S</u>	<u>10</u>	

Table A.5.1: General test parameters for Handover to intra-frequency cell

Parameter	Unit	<u>Co</u>	<u>ell 1</u>			<u>C</u>	ell 2		
DL timeslot number		<u>0</u>	<u>4</u>			<u>0</u>	<u>5</u>		
		<u>T1 T2 T3</u>	<u>T1 T2</u>	<u>T3</u>	<u>T1</u>	<u>T2 T3</u>	<u>T1 T2</u>	<u>T3</u>	
UTRA RF Channel		Cha	nnol 1			Cho	nnol 1		
<u>Number</u>									
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>n.a.</u>		<u>-3 n.a.</u>				
<u>SCH_Ec/lor</u>	<u>dB</u>	<u>-9</u>	<u>n.a.</u>		<u>-9</u>	<u>n.a.</u>			
SCH_t _{offset}	<u>dB</u>	<u>0</u>	<u>n.a.</u>		<u>5</u>	<u>n.a.</u>			
DPCH_Ec/lor	<u>dB</u>	<u>n.a.</u>	. Note 1 n.a.			<u>n.a.</u>	<u>n.a.</u>	Note 1	
OCNS_Ec/lor	<u>dB</u>	<u>-3.12</u>	<u>Note 2</u>	<u>n.a.</u>	<u>n.a.</u> <u>-3.12</u>		<u>n.a.</u>	Note 2	
\hat{I}_{or}/I_{oc}	<u>dB</u>		<u>1</u>		<u>-Inf.</u>	<u>3</u>	<u>-Inf.</u>	<u>3</u>	
PCCPCH RSCP	dBm	<u>-72</u>	<u>n.a.</u>		<u>-Inf.</u>	<u>-70</u>	<u>n.a</u>	l .	
-	<u>dBm/</u>								
I_{oc}	<u>3,84</u>			-7	<u>'0</u>				
	MHz								
Propagation Condition				AW	GN				
Note 1. The DPCH level is	controlle	d by the power contro							

Table A.5.1A: Cell specific test parameters for Handover to intra-frequency cell

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor .

Test Requirements A.5.1.1.2

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 Handover to inter-frequency cell

A.5.1.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL_DCH state in the dual carrier case reported in section 5.1.2.1.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.5.1B and A.5.1C 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 time 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 message with activation time at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the last the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. The UL DPCH shall be transmitted in timeslot 12.

Para	meter	<u>Unit</u>	Value	Comment			
DCH paramet	ers		DL Reference Measurement	As specified in TS 25.102 section A.2.2			
			Channel 12.2 kbps				
Power Contro	_		<u>On</u>				
Target quality	value on	BLER	<u>0.01</u>				
DTCH							
Initial	Active cell		<u>Cell 1</u>				
conditions	Neighbour		<u>Cell 2</u>				
	cell						
Final	Active cell		<u>Cell 2</u>				
condition							
HCS			Not used				
0		dB	<u>0</u>	Cell individual offset. This value shall be			
				used for all cells in the test.			
Hysteresis		dB	<u>0</u>	Hysteresis parameter for event 2C			
Time to Trigge	<u>er</u>	<u>ms</u>	<u>0</u>				
Threshold nor	<u>i-used</u>	<u>dBm</u>	<u>-80</u>	Applicable for Event 2C			
frequency							
W non-used fr	equency		<u>1</u>	Applicable for Event 2C			
Filter coefficie	nt		<u>0</u>				
Monitored cell	list size		6 TDD neighbours on Channel 1				
			6 TDD neighbours on Channel 2				
<u>T_{SI}</u>		<u>s</u>	<u>1.28</u>	The value shall be used for all cells in the			
				test.			
<u>T1</u>		S	<u>10</u>				
<u>T2</u>		S	<u>10</u>				
<u>T3</u>		S	<u>10</u>				

Table A.5.1B: General test parameters for Handover to inter-frequency cell

TableA.5.1C: Cell Specific parameters for Handover to inter-frequency cell

Parameter	<u>Unit</u>	C	ell 1			<u>Cell 2</u>						
DL timeslot number		<u>0</u>	4			2	5					
		<u>T1 T2 T3</u>	<u>T1</u> <u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2 T3</u>	<u>T1 T2</u>	<u>T3</u>				
<u>UTRA RF Channel</u> Number		<u>Cha</u>	annel 1			<u>Char</u>	nnel 2					
PCCPCH_Ec/lor	dB	-3	<u>n.a.</u>			<u>-3</u>	<u>n.a.</u>					
SCH_Ec/lor	dB	-9	<u>n.a.</u>			<u>-9</u>	n.a					
<u>SCH_t_{offset}</u>	<u>dB</u>	<u>0</u>	<u>n.a.</u>			<u>5</u>	<u>n.a.</u>					
DPCH_Ec/lor	dB	<u>n.a.</u>	Note 1	<u>n.a.</u>		<u>n.a.</u>	<u>n.a.</u>	Note 1				
OCNS_Ec/lor	dB	<u>-3.12</u>	Note 2	<u>n.a.</u>	n.a.	<u>-3.12</u>	<u>n.a.</u>	Note 2				
\hat{I}_{or}/I_{oc}	<u>dB</u>		<u>1</u>		<u>-Inf.</u>	<u>7</u>	<u>-Inf</u>	<u>7</u>				
PCCPCH RSCP	<u>dBm</u>	<u>-72</u>	<u>n.a.</u>		<u>-Inf66 n.a.</u>							
I_{oc}	<u>dBm/</u> 3,84 <u>MHz</u>		<u>-70</u>									
Propagation Condition				AW	GN							
Note 1: The DPCH level is	controlle	d by the power contr	ol loop									
Note 2: The power of the C	OCNS cha	annel that is added s	hall make the tota	al powe	er from t	he cell to be e	equal to lor.					

A.5.1.2.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 40 ms from the beginning of time period T2.

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

3GPP TSG RAN WG4 Meeting #21

R4-020049

Sophia Antipolis, France 28th January - 1st February 2002

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Consequences if not approved:	# Test	cases incorr	ect with res	pect to	specifie	ed power leve	ls on be	acon ch	annels.

	This CR is a correction to a function, where the specification contains contradictions. It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.
Clauses affected:	 3.2, A.4, A.5, A.6, A.6A, A.8, A.9 Other core specifications Test specifications O&M Specifications
Other comments:	¥ -

3.2 Symbols

For the purposes of the present document, the following symbols apply:

[...] Values included in square bracket must be considered for further studies, because it means that a decision about that value was not taken.

$\frac{DPCH_E_c}{I_{or}}$	The ratio of the transmit energy per PN chip of the DPCH to the total transmit power spectral density at the Node B antenna connector.
	Average energy per PN chip.
$\frac{E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for different fields or physical channels to the total transmit power spectral density at the Node B antenna connector.
I	The total received power density, including signal and interference, as measured at the UE antenna connector.
I _{oc}	The power spectral density of a band limited white noise source (simulating interference from other cells) as measured at the UE antenna connector.
I _{or}	The total transmit power spectral density of the down link at the Node B antenna connector.
Î _{or}	The received power spectral density of the down link as measured at the UE antenna connector.
$\frac{OCNS_E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for the OCNS to the total transmit power spectral density at the Node B antenna connector.
$\frac{PICH_E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for the PICH to the total transmit power spectral density at the Node B antenna connector.
$\frac{PCCPCH_E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for the PCCPCH to the total transmit power spectral density at the Node B antenna connector.
$\frac{SCH_E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for the SCH to the total transmit power spectral density at the Node B antenna connector. <u>The transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.</u>

Defined in TS 25.304
Defined in TS 25.304
Time period 1
Time period 2
Defined in TS 25.304
Defined in TS 25.304
Defined in TS 25.304

< Next changed section >

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	Active cell		Cell1	
condition	on Neighbour cells		Cell2, Cell3,Cell4,	
			Cell5, Cell6	
Final	Active cell		Cell2	
condition				
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) - 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 _{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	15	
	T2	S	15	

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

Parameter	Unit		Ce	II 1			Ce	ll 2		Cell 3				
Timeslot Number		(0	8	8	(0	1	8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nnel 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 _{offset}		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	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	
\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 _{s,n}	dB	C1, C	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, C1: 0						1: 0; C3, C3, C5: 0	C2:0; C3 ; C3,C6:	3,C4:0 0			
Qhyst 1₅	dB			0				0		0				
Treselection	S		(C			(0			(0		
Sintrasearch	dB		not	sent			not	sent			not	sent		
			Ce	ll 4			Ce	ll 5			Ce	ell 6		
Timeslot		(D	8	8	(0	8	8		0	i	8	
		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			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t _{offset}		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	- 4 <u>,283</u> ,12	- <u>4,283</u> <u>,12</u>	- <u>4,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- <u>4,283</u> , <u>12</u>	
\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 _{s,n}	dB	C4, C	1: 0; C4, C4, C5:0;	C2:0; C4; C4; C6;	4,C3:0 0	C5, C	1: 0; C5, C5, C4:0	C2:0; C5; C6;	5,C3:0 0	C6, C	1: 0; C6, C6, C4:0	C2:0; C0; ; C6, C5:	3,C3:0 0	
Qhyst1 _s	dB		(0			(0			(0		
Treselection	S		(C			(0			(0		
Sintrasearch	dB		not	sent			not	sent			not	sent		
I _{oc}	dBm/3, 84 MHz						-	70						
Propagation Condition							AW	/GN						

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.

	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_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
	Persistence value	01	1	delay is caused by the random
				access procedure. The value shall
				be used for all cells in the test.
	T _{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	15	
	T2	S	15	

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

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

Parameter	Unit		Cell 1			Cell 2				Cell 3			
Timeslot Number		(D	DW	PTS	(D	DW	PTS	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	[9]	[7]	[9]	[7]	[7]	[9]	[7]	[9]	[-1]	[-1]	[-1]	[-1]
PCCPCH RSCP	dBm	[-64]	[-66]			[-66]	[-64]			[-74]	[-74]		
Qoffset1 _{s,n}	dB	C1, C	2: 0; C1, C1, C5:0	C3:0; C ; C1,C6:	1,C4:0 0	C2, C	1: 0; C2, 2, C5: 0	C3:0; C2; C2; C2; C2; C2; C2; C2; C6;	2,C4:0 0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0: C3, C6:0			
Qhyst1 _s	dB		(0			(0			(0	
Treselection	S			0		0				0			
Sintrasearch	dB		not sent			not sent					not	sent	
		Cell 4				Ce	ll 5			Ce	ll 6		
Timeslot		(0	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	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]
PCCPCH RSCP	dBm	[-74]	[-74]			[-74]	[-74]			[-74]	[-74]		
Qoffset1 _{s,n}	dB	C4, C	1: 0; C4, C4, C5:0;	C2:0; C4; C4; C6:	4,C3:0 0	C5, C	1: 0; C5, C5, C4:0;	C2:0; C5; C6;	5,C3:0 0	C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0: C6, C5:0			
Qhyst1 _s	dB		(0			(0			(0	
Treselection	S			0		0			0				
Sintrasearch	dB		not	sent		not sent			not sent				
I _{oc}	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_{SI} 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_{SI} :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.4.2.2 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.

	Parameter	Unit	Value	Comment
Initial	Active cell	Unit	Cell1	Comment
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_T	XPWR_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) - 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 _{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	
	T2	S	15	

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

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Parameter	Unit		Cell 1				Cell 2				Cell 3			
Timeslot Number		0)	1	8	()	8	3	(0	8	8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nnel 1			Char	nnel 2			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 _{offset}		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	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,28</u> <u>3,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	
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 _{s,n}	dB	C1, C2	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0				1: 0; C2, C2, C5:0;	C3:0; C2 C2, C6:	2,C4:0 0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0				
Qhyst1 _s	dB		0				()				0		
Treselection	S		0				0				0			
Sintrasearch	dB	not sent					not	sent			not	sent		
Sintersearch	dB	not sent					not	sent			not	sent		
			Cell 4				Ce	ll 5			Ce	ll 6		
Timeslot		0)	8	B									
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nnel 1		Channel 2			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 _{offset}		15	15	15	15	20	20	20	20	25	25	25	25	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS	dB	- 4 <u>,283</u> ,12	- 4,28 3,12	- 4 <u>,283</u> ,12	- <u>4,283</u> ,12	- 4 <u>,283</u> ,12	- 4,28 <u>3</u> ,12	- <u>4,283</u> ,12	- 4 <u>,283</u> ,12	- <u>4,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- <u>4,283</u> ,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 _{s,n}	dB	C4, C ²	1: 0; C4, C4, C5:0	C2:0; C4; C4; C6:	4,C3:0 0	C5, C	1: 0; C5, C5, C4:0;	C2:0; C5, C6:	5,C3:0 0	C6, C	1: 0; C6, C6, C4:0	C2:0; C0; C0; C6, C5:	6,C3:0 0	
Qhyst1 _s	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					
I _{oc}	dBm/3, 84 MHz	-70												
Propagation Condition							AW	/GN						

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

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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. 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.

	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	-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 _{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	
	T2	S	15	

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

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

Parameter	Unit	Cell 1				Cell 2				Cell 3			
Timeslot Number		()	DW	PTS	(0	DW	PTS	(0 DWPTS		PTS
		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	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
\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 _{s,n}	dB	C1, C	2: 0; C1, C1, C5:0;	C3:0; C ² ; C1, C6:	1,C4:0 0	C C2,C	2, C1: 0; 4:0C2, C	C2, C3: 5:0; C2,	0; C6:0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst1 _s	dB		(0			(C			(0	
Treselection	S		0			0				0			
Qintrasearch	dB	not sent			not sent					not	sent		
		Cell 4				Ce	ll 5			Ce	ell 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			Cha	innel		Channel 2			Channel				
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	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]
PCCPCH RSCP	dBm	[-74]	[-74]			[-74]	[-74]			[-74]	[-74]		
Qoffset1 _{s,n}	dB	C4, C (1: 0; C4, C4, C5:0;	C2:0; C4 ; C4, C6:	4,C3:0 0	C5, C	1: 0; C5, C5, C4:0;	C2:0; C5; C5; C6:	5,C3:0 0	C6, C	1: 0; C6, C6, C4:0	C2:0; C ; C6, C5:	6,C3:0 0
Qhyst1 _s	dB		(0			(C				0	
Treselection	S		(0		0				0			
Qintrasearch	dB		[not	sent]		[not sent]			[not sent]				
I _{oc}	dBm/3, 84 MHz		-70										
Propagation Condition			AWGN										

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:

TevaluateTDD	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 _{SI}	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.4.2.2.2.2 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_{SI} 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.4.2.2A 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

	Parameter	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_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Access	Service 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 _{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.

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

Parameter	Unit	Cell 1				Cell 2					
Timeslot Number		()	Dw	Pts	0		8	3		
		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.	a.	n.	a.	-9	-9	-9	-9		
SCH_t _{offset}		n.	a.	n.	a.	0	0	0	0		
PICH_Ec/lor	dB							-3	-3		
OCNS_Ec/lor	dB	n.a.		n.a.		- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>		
\hat{I}_{or}/I_{oc}	dB	[10]	[7]			[7]	[10]	[7]	[10]		
I _{oc}	dBm/3. 84 MHz				-7	70					
PCCPCH_RSCP	dBm	[-63]	[-66]			[-66]	[-63]				
Qrxlevmin	dBm		-1	02			-1	02			
Qoffset1 _{s,n}	dB		C1, (C2: 0			C2, (C1: 0			
Qhyst1 _s	dB	0				()				
Treselection	S	0					(0			
Propagation Condition			AW	/GN		AWGN					

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

A.4.2.3 Scenario 3: TDD/FDD cell re-selection

A.4.2.3.1 Test Purpose and Environment

A.4.2.3.1.1 3.84 Mcps TDD option

This test is to verify the requirement for the TDD/FDD cell re-selection delay reported in section 4.2.2.

This scenario implies the presence of 1 TDD and 1 FDD cell as given in Table A.4.5 and A.4.6.

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.4.5: General test parameters for the TDD/FDD cell re-selection

Par	ameter	Unit	Value	Comment
Initial condition	Active cell		Cell1	TDD cell
	Neighbour cells		Cell2	FDD cell
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.
Access Servi	ce Class (ASC#0)			Selected so that no additional delay is caused
- Persis	tence value		1	by the random access procedure. The value
				shall be used for all cells in the test.
	T _{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	During T1 cell 1 better ranked than cell 2
	T2	S	15	During T2 cell 2 better ranked than cell 1

Table A.4.6: TDD/FDD cell re-selection

Parameter	Unit		Ce	ll 1		Cell 2		
Timeslot Number		()	5	3	n.a	n.a.	
		T1	T2	T 1	T 2	T 1	T 2	
UTRA RF Channel Number		Channel 1				Channel 2		
CPICH_Ec/lor	dB	n.a. n.a.			a.	-10	-10	
PCCPCH_Ec/lor	dB	-3	-3			-12	-12	
SCH_Ec/lor	dB	-9	-9	-9	-9	-12	-12	
SCH_t _{offset}		0	0	0	0	n.a.	n.a.	
PICH_Ec/lor	dB			-3	-3	-15	-15	
OCNS_Eclor	dB	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	-0,941	-0,941	
\hat{I}_{or}/I_{oc}	dB	3	-2	3	-2	-2	3	
I _{oc}	dBm/3.8 4 MHz				-7	70		
CPICH_RSCP	dBm	n.	a.	n.	a.	-82	-77	
PCCPCH_RSCP	dBm	-70	-75			n.a.	n.a.	
Cell_selection_and reselection_quality _measure			CPICH	_RSCP		CPICH_RSCP		
Qrxlevmin	dBm		-1	02		-1	15	
Qoffset1 _{s,n}	dB		C1, C	2: -12		C2, C	1: +12	
Qhyst1 _s	dB		(0		()	
Treselection	S		(0		()	
Propagation Condition			AW	'GN		AW	'GN	

NOTE: The purpose of this test case is to evaluate the delay of the TDD/FDD re-selection process, it is not intended to give reasonable values for a TDD/FDD cell re-selection.

A.4.2.3.1.2 1.28 Mcps TDD option

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

This scenario implies the presence of 1 low chip rate TDD and 1 FDD cell as given in Table A.4.5A and A.4.6A.

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.

	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	1.28 Mcps TDD OPTION cell
condition	Neighbour cells		Cell2	FDD cell
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.
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 _{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	
	T2	S	15	

Table A.4.5A: General test parameters for the TDD/FDD cell re-selection

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Table A.4.6A: Test parameters for the 1.28 Mcps TDD OPTION/FDD cell re-selection

Parameter	Unit		Ce	ll 1		Cell 2		
Timeslot Number		()	DwPts		n	.a.	
		T1	T2	T 1	T 2	T1	T2	
UTRA RF Channel Number			Char	nel 1		Char	nnel 2	
PCCPCH_Ec/lor	dB	-3	-3			-12	-12	
DwPCH_Ec/lor	dB			0	0	n	.a.	
CPICH_Ec/lor	dB	n.	a.	n.	a.	-10	-10	
SCH_Ec/lor	dB	n.	a.	n.	a.	-12	-12	
PICH_Ec/lor	dB					-15	-15	
OCNS_Ec/Ior	dB	n.	n.a. n.a		a.	-0,941	-0,941	
\hat{I}_{or}/I_{oc}	dB	[]	[]			[]	[]	
I _{oc}	dBm/1. 28 MHz	-70						
PCCPCH_RSCP	dBm	[]	[]			n.a.	n.a.	
CPICH_RSCP			n.	a.		[]	[]	
Cell_selection_and_r eselection quality _measure		CPICH_RSCP			CPICH_RSCP			
Qrxlevmin	dBm		-102			-1	15	
Qoffset1 _{s,n}	dB	C1, C2: -12				C2, C	1: +12	
Qhyst1 _s	dB	0					0	
Treselection	S	0				0		
Sintersearch	dB	not sent						
Propagation Condition		AWGN						

A.4.2.3.2 Test Requirements

A.4.2.3.2.1 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 preambles on the PRACH for sending the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

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

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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: $T_{evaluateFDD} + T_{SI}$, where:

T_{evaluateFDD} See Table 4.1 in section 4.2.2.

T_{SI} 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.4.2.3.2.2 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 preambles on the PRACH for sending 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: $T_{evaluateFDD} + T_{SI}$, where:

T_{evaluateFDD} See Table 4.1A in section 4.2.

T_{SI} 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.4.2.4 Scenario 4: inter RAT cell re-selection

A.4.2.4.1 Test Purpose and Environment

A.4.2.4.1.1 3.84 Mcps TDD option

This test is to verify the requirement for the UTRAN to GSM cell re-selection delay reported in section 4.3.2.1.

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.4.7, A.4.8, A.4.9.

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

For this test environment the ranking/mapping function indicated in the broadcast of cell 1 shall be in such a way as to enable the UE to evaluate that the TDD cell 1 is better ranked as the GSM cell 2 during T1 and the GSM cell 2 is better ranked than the TDD cell 1 during T2.

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

F	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	TDD Cell
condition	Neighbour cell		Cell2	GSM Cell
Final Active cell			Cell2	
DRX cycle length		S	1,28	UTRAN cell
BCCH repetition period (GSM cell)		S	1,87	In GSM the system information is scheduled according to an 8 x (51 x 8) cycle (i.e. a system information message is transmitted every 235 ms). The cell selection parameters in system info 3 and 4 are transmitted at least every second. (TS 45.002)
T1		S	15	
	T2	S	15	

Table A.4.8: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)				
Timeslot Number		0)	8		
		T1	T2	T1	T2	
UTRA RF Channel Number		Channel 1		Channel 1		
PCCPCH_Ec/lor	dB	-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	
SCH_t _{offset}		0	0	0	0	
PICH_Ec/lor	dB			-3	-3	
OCNS_Ec/lor	dB	- 4 <u>,283</u> , <u>12</u>	- 4 ,28 <u>3,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	
\hat{I}_{or}/I_{oc}	dB	3	-2	3	-2	
I _{oc}	dBm/3, 84 MHz	-70		-7	70	
PCCPCH RSCP	dBm	-70	-75			
Propagation Condition		AWGN		AWGN		
Treselection	S		()		
Ssearch _{RAT}	dB		not	sent		

Table A.4.9: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)			
Falameter	Onit	T1	T2		
Absolute RF Channel Number		ARFCN 1			
RXLEV	dBm	-80	-70		
RXLEV_ACCESS_MIN	dBm	-1	00		
MS_TXPWR_MAX_CCH	dBm	3	0		

NOTE: The purpose of this test case is to evaluate the delay of the TDD/GSM re-selection process, it is not intended to give reasonable values for a TDD/GSM cell re-selection.

A.4.2.4.1.2 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.4.7A, A.4.8A, A.4.9A.

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

For this test environment the ranking/mapping function indicated in the broadcast of cell 1 shall be in such a way as to enable the UE to evaluate that the 1.28 Mcps TDD OPTION cell 1 is better ranked as the GSM cell 2 during T1 and the GSM cell 2 is better ranked than the 1.28 Mcps TDD OPTION cell 1 during T2.

Table A.4.7A: General test parameters for UTRAN (1.28 Mcps TDD OPTION) to GSM Cell Re-selection

Par	ameter	Unit	Value	Comment
Initial condition	Initial condition Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
DRX cycle length		S	1,28	
	T1	S	15	
	T2	S	15	

Table A.4 8A: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
Timeslot Number		C	0		PTS
		T1	T2	T1	T2
UTRA RF Channel Number		Chan	nel 1	Channel 1	
PCCPCH_Ec/lor	dB	-3	-3		
DwPCH_Ec/lor	dB			0	0
\hat{I}_{or}/I_{oc}	dB	[9]	[7]	[9]	[7]
I _{oc}	dBm/1. 28 MHz	-70		-70	
PCCPCH RSCP	dBm	[-64]	[-66]		
Propagation Condition		AWGN		AWGN	
Cell_selection_and_ reselection_quality_m easure		P-CCPCH RSCP			
Treselection	S	[]			
Ssearch _{RAT}	dB		[]	

Table A.4.9A: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)			
	Unit	T1	T2		
Absolute RF Channel Number		ARFCN 1			
RXLEV	dBm	-80	-70		
RXLEV_ACCESS_MIN	dBm	-100			
MS_TXPWR_MAX_CCH	dBm	3	0		

A.4.2.4.2 Test Requirements

A.4.2.4.2.1 3.84 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 [8] s.

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*1280ms (T_{measureGSM} Table 4.1), means 5.12 seconds can elapse from the beginning of time period T2 before the UE has finished the measurements to evaluate that the GSM cell fulfils the re-selection criteria.

The cell selection parameters in the BCCH of the GSM cell in system info 3 and 4 are transmitted at least every second.

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 [8] s.

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*1280ms (T_{measureGSM} Table 4.5), means 5.12 seconds can elapse from the beginning of time period T2 before the UE has finished the measurements to evaluate that the GSM cell fulfils the re-selection criteria.

The cell selection parameters in the BCCH of the GSM cell in system info 3 and 4 are transmitted at least every second.

A.5 UTRAN Connected Mode Mobility

- A.5.1 TDD/TDD Handover
- A.5.1.1 3.84Mcps TDD option

void

- 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 as reported in section 5.1.2.1.2.

The test parameters are given in Table A.5.1.1 and A.5.1.2 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. 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.

Parameter		Unit	Value	Comment
DPCH parame	eters		DL Reference Measurement	As specified in TS 25.102 section A.2.2.2
			Channel 12.2 kbps	
Power Control			On	
Target quality	value on DPCH	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbouring		Cell 2	
	cell			
Final	Active cell		Cell 2	
condition				
0		dB	0	cell-individual-offset
				The value shall be used for all cells in the
				test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
T1		S	5	
T2		S	5	
T3		S	5	

Table A.5.1.1: General test parameters for intra-frequency handover

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Table A.5.1.2: Cell specific test parameters for intra-frequency handover

Parameter	Unit	Cell 1				Cell 2							
Timeslot Number			0			5			0			5	
		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel				<u>Cha</u>	in in al 4					Char			
Number			Channel 1				Channel 1						
PCCPCH_Ec/lor	dB	-3						-3					
DPCH_Ec/lor	dB				Not	Note1 n.a.					n	.a.	Note1
OCNS			Note2		Note2		Note2			Note2			
\hat{I}_{or}/I_{oc}	dB		3		[x]			-Inf. 5				[x]	
	dBm/												
I_{oc}	1.28						-7	0					
	MHz												
PCCPCH_RSCP	dBm	-70						-Inf.	-6	58			
Propagation Condition		AWGN											

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

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

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 as reported in section 5.1.2.1.2.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.5.1.3 and A.5.1.4 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 T2 with a new active cell, cell 2.

Para	meter	Unit	Value	Comment
DPCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2.2
Power Contr	ol		On	
Target qualit DPCH	ty value on	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold non used frequency		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 Trigger		ms	0	
Filter coefficient			0	
T1		S	10	
T2		S	5	

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TableA.5.1.4: Cell Specific parameters for inter-frequency handover

Parameter	Unit		C	ell 1		Cell 2				
Timeslot Number		0		5		0		5		
		T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Channel 1					Cha	nnel 2		
PCCPCH_Ec/lor	dB	-3	5			-	3			
DPCH_Ec/lor	dB			Note1	n.a.			n.a.	Note1	
OCNS		Note2		Note2		Note2		Note2		
\hat{I}_{or}/I_{oc}	dB	3		[x]		6			[x]	
I _{oc}	dBm/1. 28 MHz	-70								
PCCPCH_RSCP	dBm	-7(-70				-67			
Propagation Condition		AWGN								

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

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

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 T2.

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

A.5.2 TDD/FDD Handover

NOTE: This section is included for consistency with numbering with section 5 currently no test covering requirements in sections 5.2.2.1 and 5.2.2.2 exists.

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.

A.5.4 Cell Re-selection in CELL_FACH

A.5.4.1 3.84 Mcps TDD option

A.5.4.1.1 Scenario 1: TDD/TDD cell re-selection single carrier case

A.5.4.1.1.1 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 5.4.2.2.1. The test parameters are given in Tables A.5.4.1 to A.5.4.4.

Table A.5.4.1: 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	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.
Access S	ervice Class (ASC#0)			Selected so that no additional delay is caused by
- Persistence value		-	1	the random access procedure. The value shall be
				used for all cells in the test.
T _{SI}		S	1,28	The value shall be used for all cells in the test.
	T1	S	15	
	T2	S	15	

Table A.5.4.2: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	Kbps	24,4
Channel symbol rate	Ksps	12,2
Slot Format #	-	0
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Default Midamble

Table A.5.4.3: 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	Convolutional Coding
Coding Rate	1/2
Rate Matching attribute	256
Size of CRC	16

Parameter	Unit	Cell 1				Cell 2			Cell 3					
Timeslot Number		()	8	3	(C	8	3		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel			Char	nnel 1			Char	nnel 1			Channel 1			
Number									T	T				
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 _{offset}		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	4 <u>,283</u>	4 <u>,283</u>	4 <u>,283</u>	4 <u>,283</u>	4 <u>,283</u>	4 <u>,283</u>	4 <u>,283</u>	4 <u>,283</u>	4 <u>,283</u>	4 <u>,283</u>	4 <u>,283</u>	4 <u>,283</u>	
		<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	
\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			
Ooffoot1	dD	C1, C2	: 0; C1, 0	C3:0; C1	,C4:0	C2, C1	: 0; C2, 0	C3:0; C2	,C4:0	C3, C	1:0;C3,	C2:0; C	3,C4:0	
QUISELIs,n	uБ		C1, C5:0	; C1,C6:	0	C	2, C5: 0	; C2, C6:	0	0	C3, C5: 0	; C3, C6:	:0	
Qhyst1 _s	dB		(0			(C			(0		
Treselection			(0			(C			(0		
Sintrasearch	dB		not	sent			not	sent			not	sent		
FACH measurement			not	cont			not	cont			not	cont		
occasion info			not	Sent			not	Sent			not	Sent		
I _{oc}	dBm/3, 84 MHz						-7	70						
Propagation							010							
Condition							Avv	GN		-				
			Ce	4			Ce	ll 5			Ce	ll 6		
Timeslot		()	8	3		0	8	3		0	1	8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Channel 1 Channel 1 Channel 1					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 _{offset}		15	15	15	15	20	20	20	20	25	25	25	25	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
QCNS_Ec/lor	dB	- 4 <u>,28</u> 3	- 4 ,28 3	- 4 <u>,28</u> 3	- 4 ,28 3	- 4 <u>,28</u> 3	- 4 <u>,28</u> 3	- 4 <u>,28</u> 3	- 4 <u>,283</u>	- 4 <u>,28</u> 3	- 4 <u>,283</u>	- 4 <u>,283</u>	- 4 <u>,28</u> 3	
		<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	
\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 _{s,n}	dB	C4, C	1: 0; C4, C4, C5:0;	C2:0; C4; C4, C6:	4,C3:0 0	C5, C	1: 0; C5, C5, C4:0;	C2:0; C: C5, C6:	5,C3:0 0	C6, C1	: 0; C6, 0 C6, C4:0;	C2:0; C6 ; C6, C5:	6,C3:0 0	
Qhyst1 _s	dB		(0			()			(0		
Treselection			(0			(C			(0		
Sintrasearch	dB		not	sent			not	sent			not	sent		
FACH measurement occasion info			not	sent			not	sent			not	sent		
I _{oc}	dBm/3.													
	84 MHz		-70											

Table A.5.4.4: Cell specific test parameters for Cell Re-selection in CELL_FACH

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Note: S-CCPCH shall not be located in TS0.

A.5.4.1.1.2 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 the CELL UPDATE message with cause value "cell reselection" in cell 2.

The cell re-selection delay shall be less than 2,5 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{reselection,intra} = T_{identify intra} + T_{SI}$, where:

- T_{identify intra} Specified in 8.4.2.2.1, gives 800 ms for this test case.
- T_{SI} 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 2,08s, allow 2,5 s in the test case.

A.5.4.1.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

A.5.4.1.2.1 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 the multi carrier case reported in section 5.4.2.2.2. The test parameters are given in Tables A.5.4.5 to A.5.4.8.

Table A.5.4.5: 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	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.
Access S	ervice Class (ASC#0)			Selected so that no additional delay is caused by
- Persistence value		-	1	the random access procedure. The value shall be
				used for all cells in the test.
T _{SI}		S	1,28	The value shall be used for all cells in the test.
	T1	S	15	
	T2	S	15	

Table A.5.4.6: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	Kbps	24,4
Channel symbol rate	Ksps	12,2
Slot Format #	-	0
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Default 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	Convolutional Coding
Coding Rate	1/2
Rate Matching attribute	256
Size of CRC	16

Parameter	Unit	Cell 1				Cell 2				Cell 3			
Timeslot Number		()	8	8	()	8	3	(0	8	3
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel		Channel 1				Channel 2			Channel 1				
	dB	-3	-3			-3	-3			-3	-3		
SCH Ec/lor	dB	 Q	-0	-9	-9	-9	-0	-9	-9	-9	-9	-9	-9
SCH tottaat	uD	0	0	0	0	5	5	5	5	10	10	10	10
PICH Ec/lor	dB	Ŭ	Ū	-3	-3	0	Ŭ	-3	-3	10	10	-3	-3
		-	-	-	-	-	-	-	-	-	-	-	-
OCNS_Ec/lor	dB	4 <u>,283</u> , <u>12</u>	4 <u>,283</u> <u>,12</u>	4 <u>,283</u> , <u>12</u>	4 <u>,283</u> <u>,12</u>	4 <u>,283</u> <u>,12</u>	4 <u>,283</u> , <u>12</u>	4 <u>,283</u> <u>,12</u>	4 <u>,283</u> <u>,12</u>	4 <u>,283</u> <u>,12</u>	4 <u>,283</u> <u>,12</u>	4 <u>,283</u> <u>,12</u>	4 <u>,283</u> <u>,12</u>
\hat{I}_{or}/I_{oc}	dB	9	3	9	3	3	9	3	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-70			-70	-64			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2	: 0; C1, 0 C1, C5:0	C3:0; C1 ; C1,C6:	,C4:0 0	C2, C1	: 0; C2, 0 2, C5: 0	C3:0; C2 ; C2, C6:	,C4:0 0	C3, C	1: 0; C3, C3, C5: 0	C2:0; C3; C3; C3; C3; C6;	3,C4:0 0
Qhyst1 _s	dB		()			()			()	
Treselection			()			()			()	
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	
Inter-frequency TDD measurement indicator			TR	UE			TR	UE			TR	UE	
I _{oc}	dBm/3, 84 MHz						-7	70					
Propagation Condition			AWGN										
		Cell 4 Cell 5								r			
			Ce	II 4	_		Се	II 5			Ce	ll 6	_
Timeslot		(Ce)	4 _ {	8	(Ce)	II 5 8	3	(Ce 0	II 6 8	8
		(T1	Ce) T2	II 4 T1	8 T2	T1	Ce) T2	II 5 1 T1	3 T2	T1	Ce 0 T2	II 6 T1	8 T2
Timeslot UTRA RF Channel Number		(T1	Ce) T2 Char	II 4 T1 nnel 1	8 T2	T1	Ce) T2 Char	II 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3 T2	 T1	Ce 0 T2 Char	II 6 T1 nnel 2	3 T2
Timeslot UTRA RF Channel Number PCCPCH_Ec/lor	dB	(T1 -3	Ce) T2 Char -3	II 4 T1 nnel 1	B T2	-3	Ce 7 72 Char -3	II 5 T1 nnel 2	3 T2	-3	Ce 0 T2 Char -3	II 6 T1 nnel 2	3 T2
Timeslot UTRA RF Channel Number PCCPCH_Ec/lor SCH_Ec/lor	dB dB	-3 -9	Ce) T2 Char -3 -9	II 4 T1 nnel 1 -9	B T2 -9	-3 -9	Ce 7 72 Char -3 -9	II 5 T1 nnel 2 -9	3 T2 -9	-3 -9	Ce 0 Char -3 -9	II 6 8 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B T2 -9
Timeslot UTRA RF Channel Number PCCPCH_Ec/lor SCH_Ec/lor SCH_toffset	dB dB	-3 -9 15	Ce 72 Char -3 -9 15	II 4 T1 nnel 1 -9 15	3 T2 -9 15	-3 -9 20	Ce 7 Char -3 -9 20	II 5 T1 inel 2 -9 20	3 T2 -9 20	-3 -9 25	Ce 0 72 Char -3 -9 25	II 6 T1 inel 2 -9 25	3 T2 -9 25
Timeslot UTRA RF Channel Number PCCPCH_Ec/lor SCH_Ec/lor SCH_toffset PICH_Ec/lor	dB dB dB	-3 -9 15	Ce 72 Char -3 -9 15	II 4 T1 anel 1 -9 15 -3 -3	72 -9 15 -3	-3 -9 20	Ce 7 Char -3 -9 20	II 5 T1 anel 2 -9 20 -3 -	3 T2 -9 20 -3	-3 -9 25	Ce 0 T2 Char -3 -9 25	II 6 T1 mel 2 -9 25 -3 -	72 -9 25 -3
Timeslot UTRA RF Channel Number PCCPCH_Ec/lor SCH_Ec/lor SCH_toffset PICH_Ec/lor OCNS_Ec/lor	dB dB dB dB	-3 -9 15 - 4,28 <u>3</u> ,12	Ce T2 Char -3 -9 15 - 4,28 <u>3</u> ,12	II 4 T1 anel 1 -9 15 -3 -3 -3 -3 -12	B T2 -9 15 -3 - 4,28 <u>3</u> ,12	-3 -9 20 - 4,28 <u>3</u> ,12	Ce 7 Char -3 -9 20 - 4,28 <u>3</u> .12	II 5 T1 anel 2 -9 20 -3 - 4,28 <u>3</u> ,12	3 T2 -9 20 -3 - 4,28 <u>3</u> ,12	-3 -9 25 - 4,28 <u>3</u> .12	Ce 0 T2 Char -3 -9 25 - 4,28 <u>3</u> .12	II 6 T1 anel 2 -9 25 -3 - 4,28 <u>3</u> ,12	3 T2 -9 25 -3 - 4,28 <u>3</u> ,12
${}$ Timeslot ${}$ UTRA RF Channel Number ${}$ PCCPCH_Ec/lor ${}$ SCH_Ec/lor ${}$ PICH_Ec/lor ${}$	dB dB dB dB dB dB	-3 -9 15 - 4,283 ,12 -1	Ce 72 Char -3 -9 15 - 4,283 _12 -1	II 4 T1 inel 1 -9 15 -3 - 4,283 ,12 -1	B T2 -9 15 -3 - 4,283 <u>,12</u> -1	-3 -9 20 - 4,283 _12 -1	Ce 7 72 Char -3 -9 20 - 4,28 <u>3</u> ,12 -1	II 5 T1 anel 2 -9 20 -3 - 4,283 <u>12</u> -1	3 T2 -9 20 -3 - 4,28 <u>3</u> ,12 -1	-3 -9 25 - 4,283 ,12 -1	Ce 0 T2 Char -3 -9 25 - 4,28 <u>3</u> ,12 -1	II 6 T1 inel 2 -9 25 -3 - 4,283 <u>12</u> -1	3 T2 -9 25 -3 - 4,283 <u>,12</u> -1
Timeslot UTRA RF Channel Number PCCPCH_Ec/lor SCH_Ec/lor SCH_toffset PICH_Ec/lor QCNS_Ec/lor \hat{I}_{or}/I_{oc} PCCPCH RSCP	dB dB dB dB dB dB	-3 -9 15 - 4,283 ,12 -1 -74	Ce 72 Char -3 -9 15 - 4,283 ,12 -1 -74	II 4 T1 inel 1 -9 15 -3 - 4,283 ,12 -1	B -9 15 -3 - 4,28 <u>3</u> <u>12</u> -1	-3 -9 20 - 4,283 _12 -1 -1 -74	Ce 7 Char -3 -9 20 - 4,283 .12 -1 -1 -74	II 5 T1 anel 2 -9 20 -3 - 4,283 ,12 -1	3 T2 -9 20 -3 - 4,283 ,12 -1	-3 -9 25 - 4,283 ,12 -1 -74	Ce 0 T2 Char -3 -9 25 - 4,283 ,12 -1 -74	II 6 T1 inel 2 -9 25 -3 - 4,283 ,12 -1	3 T2 -9 25 -3 - 4,28 <u>3</u> .12 -1
$\begin{tabular}{ c c c c c } \hline Timeslot \\ \hline Timeslot \\ \hline UTRA RF Channel \\ Number \\ \hline PCCPCH_Ec/lor \\ \hline SCH_Ec/lor \\ \hline SCH_toffset \\ \hline PICH_Ec/lor \\ \hline OCNS_Ec/lor \\ \hline $\hat{I}_{or}/I_{oc} \\ \hline PCCPCH RSCP \\ \hline $Qoffset1_{s,n}$ \\ \hline \end{tabular}$	dB dB dB dB dB dB dBm dB	-3 -9 15 - 4,283 ,12 -1 -74 C4, C	Ce T2 Char -3 -9 15 - 4,283 _12 -1 -74 1: 0; C4, 24, C5:0	II 4 T1 inel 1 -9 15 -3 - 4,283 ,12 -1 C2:0; C4 C4: C6 ⁻¹	B T2 -9 15 -3 -1 4,283 ,12 -1 4,C3:0 0	-3 -9 20 - 4,283 _12 -1 -74 C5, C	Ce T2 Char -3 -9 20 - 4,283 ,12 -1 -74 1: 0; C5, C5, C4.0	II 5 T1 mel 2 -9 20 -3 - 4,283 12 -1 C2:0; C2 C5 C6	72 -9 20 -3 - 4,283 ,12 -1 5,C3:0	T1 -3 -9 25 - 4,283 _12 -1 -1 -74 C6, C1	Ce 7 T2 Char -3 -9 25 - 4,283 ,12 -1 -74 : 0; C6, Q	II 6 T1 inel 2 -9 25 -3 - 4,283 ,12 -1 C2:0; C6 C6, C5:	3 T2 -9 25 -3 - 4,283 ,12 -1 ,C3:0 0
Timeslot UTRA RF Channel Number PCCPCH_Ec/lor SCH_Ec/lor SCH_toffset PICH_Ec/lor QCNS_Ec/lor \hat{I}_{or}/I_{oc} PCCPCH RSCP Qoffset1 _{s,n} Ohvst1_c	dB dB dB dB dB dB dBm dB dB dB	-3 -9 15 - 4,283 ,12 -1 -74 C4, C	Ce T2 Char -3 -9 15 - 4,283 .12 -1 -74 1: 0; C4, C4, C5:0;	II 4 T1 anel 1 -9 15 -3 - 4,283 ,12 -1 C2:0; C4 C4, C6:	72 -9 15 -3 - 4,283 .12 -1 4,C3:0 0	-3 -9 20 - 4,283 .12 -1 -74 C5, C	Ce T2 Char -3 -9 20 - 4,283 .12 -1 -74 1: 0; C5, C5, C4:0;	II 5 T1 mel 2 -9 20 -3 - 4,283 <u>12</u> -1 C2:0; C: C5, C6:	72 -9 20 -3 - 4,283 .12 -1 5,C3:0 0	T1 -3 -9 25 - 4,283 .12 -1 -74 C6, C1	Ce 7 T2 Char -3 -9 25 - 4,283 ,12 -1 -74 : 0; C6, 0 C6, C4:0;	II 6 T1 anel 2 -9 25 -3 - 4,283 <u>,12</u> -1 C2:0; C6 C6, C5::	3 T2 -9 25 -3 - 4,283 <u>,12</u> -1 ,C3:0 0
Timeslot UTRA RF Channel Number PCCPCH_Ec/lor SCH_Ec/lor SCH_toffset PICH_Ec/lor QCNS_Ec/lor \hat{I}_{or}/I_{oc} PCCPCH RSCP Qoffset1 _{s,n} Qhyst1_s	dB dB dB dB dB dB dBm dB dB	-3 -9 15 - 4,283 ,12 -1 -74 C4, C	Ce T2 Char -3 -9 15 - 4,283 .12 -1 -74 1: 0; C4, C4, C5:0; (II 4 T1 anel 1 -9 15 -3 -1 (22:0; C4 C2:0; C4 C4, C6::)	B T2 -9 15 -3 - 4,283 <u>,12</u> -1 4,C3:0 0	-3 -9 20 - 4,283 .12 -1 -74 C5, C	Ce T2 Char -3 -9 20 - 4,283 .12 -1 -74 1: 0; C5, C5, C4:0; (II 5 T1 mel 2 -9 20 -3 - 4,283 .12 -1 C2:0; C: C5, C6: D	72 -9 20 -3 - 4,283 .12 -1 5,C3:0 0	T1 -3 -9 25 - 4,283 ,12 -1 -74 C6, C1	Ce 7 T2 Char -3 -9 25 - 4,283 <u>12</u> -1 -74 : 0; C6, 0 C6, C4:0; (0)	II 6 T1 anel 2 -9 25 -3 - 4,283 ,12 -1 C2:0; C6 C6, C5::	B T2 -9 25 -3 - 4,283 <u>,12</u> -1 ,C3:0 0
Timeslot UTRA RF Channel Number PCCPCH_Ec/lor SCH_toffset PICH_Ec/lor QCNS_Ec/lor \hat{I}_{or}/I_{oc} PCCPCH RSCP Qoffset1 _{s,n} Qhyst1s Treselection Sintrasearch	dB dB dB dB dB dB dB dB dB dB dB	-3 -9 15 - 4,283 ,12 -1 -74 C4, C	Ce T2 Char -3 -9 15 - 4,283 ,12 -1 -74 1: 0; C4, C4, C5:0; ((((() () () () () () () (II 4 T1 anel 1 -9 15 -3 -1 4,283 ,12 -1 C2:0; C4 C4, C6: D Sent	B T2 -9 15 -3 -3 <u>-</u> 4,283 <u>,12</u> -1 4,C3:0 0	-3 -9 20 - 4,283 ,12 -1 -74 C5, C	Ce T2 Char -3 -9 20 - 4,283 ,12 -1 -74 1: 0; C5, C5, C4:0; (0 0 0 0 0 0 0 0 0 0 0 0 0	II 5 T1 anel 2 -9 20 -3 -1 (22:0; C: C5, C6:)) Sent	T2 -9 20 -3 - 4,283 ,12 -1 5,C3:0 0	T1 -3 -9 25 - 4,283 ,12 -1 -74 C6, C1	Ce 7 7 7 7 7 7 7 7 7 7 7 7 7	II 6 T1 anel 2 -9 25 -3 -1 -1 C2:0; C6 C6, C5:0 0 5 Sent	B T2 -9 25 -3 -1 -1 ,C3:0 0
Timeslot UTRA RF Channel Number PCCPCH_Ec/lor SCH_toffset PICH_EC/lor \hat{O} CNS_Ec/lor \hat{I}_{or}/I_{oc} PCCPCH RSCP Qoffset1 _{s,n} Qhyst1s Treselection Sintrasearch Sintersearch	dB dB dB dB dB dB dB dB dB dB dB dB dB	-3 -9 15 - 4,28 <u>3</u> ,12 -1 -74 C4, C	Ce T2 Char -3 -9 15 -1 -1 -74 1: 0; C4, C4, C5:0; (0 0 0 0 0 0 0 0 0 0 0 0 0	II 4 T1 anel 1 -9 15 -3 -1 4,283 ,12 -1 C2:0; C4 C4, C6: D Sent sent	B T2 -9 15 -3 - 4,283 <u>,12</u> -1 4, C3:0 0	-3 -9 20 - 4,283 .12 -1 -74 C5, C	Ce T2 Char -3 -9 20 -4,283 ,12 -1 -74 1: 0; C5, C5, C4:0; (0 0 0 0 0 0 0 0 0 0 0 0 0	II 5 T1 anel 2 -9 20 -3 -1 4,283 ,12 -1 C2:0; C: C5, C6: D sent sent sent	3 T2 -9 20 -3 - 4,283 <u>,12</u> -1 5,C3:0 0	-3 -9 25 -4,283 .12 -1 -74 C6, C1	Ce 0 T2 Char -3 -9 25 -4,283 .12 -1 -74 : 0; C6, C C6, C4:0; (0 0 0 0 0 0 0 0 0 0 0 0 0	II 6 T1 anel 2 -9 25 -3 -1 -1 C2:0; C6 C6, C5: -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	3 T2 -9 25 -3 -1 -1 ,C3:0 0
Timeslot UTRA RF Channel Number PCCPCH_Ec/lor SCH_toffset PICH_EC/lor \hat{C} CNS_Ec/lor \hat{I}_{or}/I_{oc} PCCPCH RSCP Qoffset1 _{s,n} Qhyst1s Treselection Sintrasearch Sintersearch FACH measurement	dB dB dB dB dB dB dB dB dB dB dB dB dB	-3 -9 15 - 4,28 <u>3</u> ,12 -1 -74 C4, C	Ce T2 Char -3 -9 15 -1 -1 -74 1: 0; C4, C4, C5:0; (not not	II 4 T1 anel 1 -9 15 -3 -1 -1 C2:0; C4 C4, C6: -1 -1 C2:0; C4 C4, C6: -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	B T2 -9 15 -3 - 4,283 ,12 -1 -1 4, C3:0 0	-3 -9 20 - 4,283 ,12 -1 -74 C5, C	Ce T2 Char -3 -9 20 -4,283 ,12 -1 -74 1: 0; C5, C5, C4:0; (not not	II 5 T1 anel 2 -9 20 -3 -1 4,283 ,12 -1 C2:0; C: C5, C6: D sent sent	3 T2 -9 20 -3 - 4,283 ,12 -1 5,C3:0 0	-3 -9 25 -4,283 .12 -1 -74 C6, C1	Ce 0 T2 Char -3 -9 25 -4,283 .12 -1 -74 : 0; C6, C C6, C4:0; (0 0 0 0 0 0 0 0 0 0 0 0 0	II 6 T1 anel 2 -9 25 -3 -1 -1 C2:0; C6 C6, C5: -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	3 T2 -9 25 -3 -1 4,283 ,12 -1 ,C3:0 0
Timeslot UTRA RF Channel Number PCCPCH_Ec/lor SCH_toffset PICH_Ec/lor $dCNS_Ec/lor$ \hat{I}_{or}/I_{oc} PCCPCH RSCP Qoffset1 _{s,n} Qhyst1s Treselection Sintrasearch Sintersearch FACH measurement occasion info	dB dB dB dB dB dB dB dB dB dB dB dB	-3 -9 15 - 4,28 <u>3</u> ,12 -1 -74 C4, C	Ce T2 Char -3 -9 15 - 4,283 ,12 -1 -74 1: 0; C4, C4, C5:0; (0) 0 0 0 0 0 0 0 0 0 0 0 0 0	II 4 T1 anel 1 -9 15 -3 -3 -1 4,283 ,12 -1 C2:0; C4 C4, C6: D D sent sent sent	B T2 -9 15 -3 -1 4,283 <u>12</u> -1 4,C3:0 0	-3 -9 20 - 4,283 _12 -1 -74 C5, C	Ce T2 Char -3 -9 20 -4,283 .12 -1 -74 1: 0; C5, C5, C4:0; (0) 0 0 0 0 0 0 0 0 0 0 0 0 0	II 5 T1 anel 2 -9 20 -3 -1 -1 C2:0; C2 C5, C6: D Sent sent sent	T2 -9 20 -3 - 4,283 .12 -1 5,C3:0 0	-3 -9 25 - 4,283 ,12 -1 -74 C6, C1	Ce 0 T2 Char -3 -9 25 -4,283 .12 -1 -74 : 0; C6, 0 C6, C4:0; (0) 0 0 0 0 0 0 0 0 0 0 0 0 0	II 6 T1 anel 2 -9 25 -3 - 4,283 <u>12</u> -1 C2:0; C6 C6, C5: D Sent sent sent	B T2 -9 25 -3 -1 -1 ,C3:0 0
Timeslot UTRA RF Channel Number PCCPCH_Ec/lor SCH_Ec/lor SCH_toffset PICH_Ec/lor QCNS_Ec/lor \hat{I}_{or}/I_{oc} PCCPCH RSCP Qoffset1 _{s,n} Qhyst1 _s Treselection Sintersearch Sintersearch FACH measurement occasion info Inter-frequency TDD measurement indicator	dB dB dB dB dB dB dB dB dB dB dB	-3 -9 15 - - 4,283 ,12 -1 -74 C4, C	Ce T2 Char -3 -9 15 - 4,283 ,12 -1 -74 1: 0; C4, C4, C5:0; (0) 0 0 0 0 0 15 - - - - - - - - - - - - -	II 4 T1 inel 1 -9 15 -3 -4,283 ,12 -1 C2:0; C4 C4, C6: D Sent sent UE	B T2 -9 15 -3 -1 4,283 <u>12</u> -1 4,C3:0 0	-3 -9 20 - 4,283 ,12 -1 -74 C5, C	Ce 7 T2 Char -3 -9 20 - 4,283 ,12 -1 -74 1: 0; C5, 25, C4:0; (0) not not not TR	II 5 T1 anel 2 -9 20 -3 -4,283 <u>12</u> -1 C2:0; C: C5, C6:)) sent sent UE	3 T2 -9 20 -3 - 4,283 <u>12</u> -1 5,C3:0 0	-3 -9 25 - 4,283 .12 -1 -74 C6, C1	Ce 0 T2 Char -3 -9 25 - 4,283 ,12 -1 -74 : 0; C6, 0 C6, C4:0; (0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	II 6 T1 inel 2 -9 25 -3 -4,283 ,12 -1 C2:0; C6 C6, C5:0) sent sent UE	3 T2 -9 25 -3 - 4,283 <u>,12</u> -1 ,C3:0 0
$\begin{tabular}{ c c c c c } \hline Timeslot \\ \hline Timeslot \\ \hline UTRA RF Channel Number \\ \hline PCCPCH_Ec/lor \\ \hline SCH_Ec/lor \\ \hline SCH_toffset \\ \hline PICH_Ec/lor \\ \hline OCNS_Ec/lor \\ \hline OCNS_E$	dB dB dB dB dB dB dB dB dB dB dB dB dB d	-3 -9 15 - - 4,283 ,12 -1 -74 C4, C	Ce T2 Char -3 -9 15 - 4,283 ,12 -1 -74 1: 0; C4, C5:0; (0 not not not TR	II 4 T1 inel 1 -9 15 -3 -3 -4,283 ,12 -1 C2:0; C4 C4, C6::)) sent sent UE	B T2 -9 15 -3 -1 4,283 <u>12</u> -1 4,C3:0 0	-3 -9 20 - 4,283 _12 -1 -74 C5, C	Ce 7 T2 Char -3 -9 20 - 4,283 ,12 -1 -74 1: 0; C5, C5, C4:0; (0) (0) not not not TR -7	II 5 T1 anel 2 -9 20 -3 -4,283 ,12 -1 C2:0; C: C5, C6:)) sent sent UE 70	3 T2 -9 20 -3 - 4,283 <u>12</u> -1 5,C3:0 0	-3 -9 25 - 4,283 ,12 -1 -74 C6, C1	Ce 0 T2 Char -3 -9 25 4,283 ,12 -1 -74 : 0; C6, 0 C6, C4:0; (0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	II 6 T1 anel 2 -9 25 -3 -4,283 12 -1 C2:0; C6 C6, C5::)) sent sent UE	3 T2 -9 25 -3 -1 -1 ,C3:0 0

Table A.5.4.8: Cell specific test parameters for Cell Re-selection in CELL_FACH

Note: S-CCPCH shall not be located in TS0.

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A.5.4.1.2.2 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 the CELL UPDATE message with cause value "cell reselection" in cell 2.

The cell re-selection delay shall be less than 7 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{reselection,inter} = T_{identify inter} + T_{SI}$, where:

 $T_{identify intra}$ Specified in 8.4.2.3.1, gives 5 s for this test case.

T_{SI} 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 6,28s, allow 7 s in the test case.

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.
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 _{SI}		S	1.28	The value shall be used for all cells in the test.
	T1	S	5	
	T2	S	5	

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.5.4.10: Physical channel parameters for S-CCPCH.

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Table A.5.4.11: 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.5.4.12: Cell specific test parameters for Cell Re-selection in CELL_FAC

Parameter	Unit	Cell 1			Cell 2				Cell 3				
Timeslot Number		()	DWPTS		0 DWPTS		PTS	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	[9]	[7]	[9]	[7]	[7]	[9]	[7]	[9]	[-1]	[-1]	[-1]	[-1]
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2	: 0; C1, 0 C1, C5:0	C3:0; C1 ; C1,C6:	,C4:0 0	C2, C1	: 0; C2, 0 2, C5: 0	C3:0; C2 ; C2, C6:	,C4:0 0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 _s	dB		(0			()			(0	
Treselection			(0			()			(0	
Sintrasearch	dB		not	sent			not	sent			not	sent	
FACH measurement			not	sent		not sent				not sent			
occasion info													
			Ce			Cell 5			Cell 6				
limeslot		()	DW T4		(0	DW		()	DW	
		11	12 Char	11	12	11	12 Char	11	12	11	12 Char	11	12
Number			Char		-	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	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C	1: 0; C4, C4, C5:0;	C2:0; C4; C4; C6;	4,C3:0 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 _s	dB		(C		0				0			
Treselection		0				0			0				
Sintrasearch	dB	not sent				not sent				not sent			
FACH measurement occasion info		not sent				not sent not sent							
I _{oc}	dBm/1. 28 MHz	-70											
Propagation Condition		AWGN											

Note: S-CCPCH is located in an other downlink TS than TS0.

Release 4

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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:

$$\Gamma_{\text{reselection.intra}} = T_{\text{Measurement Period Intra}} + 40ms + T_{\text{SI}} + T_{\text{RA}}$$

where:

 $T_{Measurement\ Period\ Intra} \quad Specified\ in\ 8.4A.2.2.2\ gives\ [200]ms\ for\ this\ test\ case.$

- T_{SI} 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.
- 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.
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 _{SI}		S	1.28	The value shall be used for all cells in the test.
	T1	S	10	
	T2	S	15	

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.5.4.14: Physical channel parameters for S-CCPCH.

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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

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 T		T2				
UTRA RF Channel Number		Channel 1			Channel 2			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	[9]	[7]	[9]	[7]	[7]	[9]	[7]	[9]	[-1]	[-1]	[-1]	[-1]	
PCCPCH RSCP	dBm	[-64]	[-66]			[-66]	[-64]			[-74]	[-74]			
Qoffset1 _{s,n}	dB	C1, C2	2: 0; C1, C1, C5:0	C3:0; C ; C1,C6:	1,C4:0 0	C2, C1	: 0; C2, 0 C2, C5: 0	C3:0; C2 ; C2:C6:	,C4:0 0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3:C6:0				
Qhyst1 _s	dBm		()			()			()		
Treselection	S		()			()			()		
Sintrasearch	dB		not	sent			not	sent			not	sent		
FACH measurement occasion info			not	sent			not	sent			not	sent		
FACH measurement			2	1			4	4			2	1		
measurement indicator			TR	UE			TRUE			TRUE				
Inter-frequency FDD measurement			FAI	SE			FALSE				FALSE			
indicator			-			0.011 5				0.011.0				
Timeslat			Ce		DTO							DTO		
Timesiot		т ₁) Т2		F13	T1	ј Т2		F13	T1	U Т2		F13 T2	
UTRA RF Channel			Cha	nnel	12		Char	nnel 2	12		Cha	nnel	12	
PCCPCH Ec/lor	dB	-3	-3			-3	-3			-3	-3			
DwPCH Ec/lor	dB			0	0	-		0	0		<u> </u>	0	0	
$\hat{I}_{or}/\bar{I}_{oc}$	dB	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	[-1]	
PCCPCH RSCP	dBm	[-74]	[-74]			[-74]	[-74]			[-74]	[-74]			
Qoffset1 _{s,n}	dB	C C4,C	4, C1: 0; 3:0C4, 0	C4, C2: C5:0; C4	0; :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 _s	dB		, ()		0			0					
Treselection	S		()		0				0				
Qintrasearch	dB		not	sent		not sent				not sent				
FACH measurement			not	sent		not sent			not sent					
FACH measurement		4				4				4				
occasion cycle length		· · · · · · · · · · · · · · · · · · ·								т 				
inter-frequency TDD measurement indicator		TRUE			TRUE			TRUE						
Inter-frequency FDD measurement indicator		FALSE				FALSE			FALSE					
I _{oc}	dBm/1. 28 MHz		-70											
Propagation			AWGN											

Table A.5.4.16: Cell specific test parameters for Cell re-selection in CELL_FACH state

Note: S-CCPCH is located in an other downlink TS than TS0..

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:

r

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

where:

T_{measurement inter} Specified in 8.4A.2.3.2 gives [480]ms for this test case.

- T_{SI} 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.
- 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.

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	n single carrier multi-cell case

	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_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.										
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 _{SI}	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	II 1			Ce	11 2			Ce	ll 3		
---------------------------	------------------	----------------------------------	----------------------------------	----------------------------------	----------------------------------	----------------------------------	--------------------------------------	----------------------------------	----------------------------------	---	-----------------------------------	-----------------------------------	-----------------------------------	--
Timeslot Number		()	8	8	(0	8	3	(0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nnel 1		Channel 1				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 _{offset}		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	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>						
\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 _{s,n}	dB	C1, C	2: 0; C1, C1, C5:0	C3:0; C ² ; C1,C6:	1,C4:0 0	C2, C	1: 0; C2, 22, C5: 0	C3:0; C2 ; C2, C6:	2,C4:0 0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0				
Qhyst1 _s	dB		(0			0				0			
Treselection	S		(C		0						0		
Sintrasearch	dB		not	sent			not	sent			not	sent		
			Ce	ll 4			Ce	ll 5			Ce	ell 6		
Timeslot		(D	8	8	(0	8	3		0	i	8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Channel 1			Channel 1					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 _{offset}		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	- <u>4,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- <u>4,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4,28<u>3</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	
\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 _{s,n}	dB	C4, C	1: 0; C4, C4, C5:0;	C2:0; C4; C4; C6;	4,C3:0 0	C5, C	1: 0; C5, C5, C4:0;	C2:0; C5; C6;	5,C3:0 0	C6, C	1: 0; C6, C6, C4:0	C2:0; C0; ; C6, C5:	6,C3:0 0	
Qhyst1 _s	dB		(0			(0				0		
Treselection	S		(0			(0				0		
Sintrasearch	dB		not	sent			not	sent			not	sent		
I _{oc}	dBm/3, 84 MHz						-	70						
Propagation Condition							AW	/GN						

Table A.5.6: Cell re-selection	n single carrie	r multi-cell case
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A5.5.1.1.2 1.28Mcps TDD option

(void)

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:

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 _{SI}	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 tota	l of 7.68 s, allow 8s in the test case.

A5.5.1.2.2 1.28Mcps TDD option

void

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

P	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_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) - 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 _{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	
	T2	S	15	

Parameter	Unit		Ce	II 1			Се	11 2			Ce	ll 3	
Timeslot Number		C)	8	В	()	8	3	(0		8
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1			Char	nnel 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 _{offset}		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	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,28</u> <u>3,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>
\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 _{s,n}	dB	C1, C2	2: 0; C1, 21, C5:0;	C3:0; C ² ; C1, C6:	1,C4:0 0	C2, C	1: 0; C2, C2, C5:0;	C3:0; C2; C2, C6:	2,C4:0 0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst1 _s	dB		(0				0		0			
Treselection	S		(0				0		0			
Sintrasearch	dB		not	sent			not	sent			not	sent	
Sintersearch	dB		not	sent			not	sent			not	sent	
			Ce	II 4			Ce	ll 5			Ce	ell 6	
Timeslot		C)	8	8	(00	8	3		00		8
		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 _{offset}		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	- <u>4,283</u> ,12	- 4,28 3,12	- 4,28<u>3</u> ,12	- 4,28<u>3</u> ,12	- <u>4,283</u> ,12	- 4,28<u>3</u> ,12	- <u>4,283</u> ,12	- 4 <u>,283</u> ,12	- 4,28<u>3</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,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 _{s,n}	dB	C4, C ⁷	1: 0; C4, 24, C5:0;	C2:0; C4; C4; C6;	4,C3:0 0	C5, C	1: 0; C5, C5, C4:0;	C2:0; C5; C5; C6;	5,C3:0 0	C6, C	1: 0; C6, C6, C4:0	C2:0; C ; C6, C5:	6,C3:0 0
Qhyst1 _s	dB		(0				0				0	
Treselection	S		(0				0				0	
Sintrasearch	dB		not	sent			not	sent			not	sent	
Sintersearch	dB		not sent not sent not sent										
I _{oc}	dBm/3, 84 MHz						-	70					
Propagation Condition							AW	/GN					

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

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A.5.5.2.1.2 for 1.28Mcps TDD option

(void)

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:

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

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

Cell Re-selection in URA_PCH A.5.6

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	
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
- Persiste	nce 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.
T	1	S	15	
Т	2	S	15	

Parameter	Unit		Се	ll 1			Се	11 2			Се	11 3		
Timeslot Number		(0		В	(0		3	(0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nnel 1			Char	nnel 1			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 _{offset}		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	- 4 <u>,283</u>	- 4 <u>,283</u>	- 4 <u>,283</u>	- 4 <u>,283</u>	- 4 <u>,283</u>	- 4 <u>,283</u>	- 4 <u>,283</u>	- 4 <u>,283</u>	- 4 <u>,283</u>	- 4 <u>,283</u>	- 4 <u>,283</u>	4 <u>,283</u>	
		<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	
\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 _{s,n}	dB	C1, C	2: 0; C1, C1, C5:0	C3:0; C [·]); C1,C6:	1,C4:0 0	C2, C	2, 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 _s	dB		0 0							0				
Treselection	S			0			(0			(0		
Sintrasearch	dB		not	sent			not	sent			not	sent		
			Ce	ell 4			Ce	ll 5			Ce	ll 6		
Timeslot			0 8				0	8	3	(0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nnel 1		Channel 1					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 _{offset}		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	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	
\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 _{s,n}	dB	C4, C	1: 0; C4, C4, C5:0	C2:0; C4; C4; C4; C6;	4,C3:0 0	C5, C	1: 0; C5, C5, C4:0;	C2:0; C5; C5; C6;	5,C3:0 0	C6, C	1: 0; C6, C6, C4:0	C2:0; C0; C0; C6, C5:	6,C3:0 0	
Qhyst1 _s	dB			0			(0			(0		
Treselection	S			0			(0			(0		
Sintrasearch	dB		not	sent			not	sent			not	sent		
I _{oc}	dBm/3, 84 MHz						-	70						
Propagation Condition							AW	/GN						

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

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A.5.6.1.1.2 for 1.28Mcps TDD option

(void)

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:

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A.5.6.1.2.2 for 1.28Mcps TDD option

(void)

Release 4

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

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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	
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) - 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.
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	1	S	30	
Т	2	S	15	

Parameter	Unit		Се	II 1			Се	11 2			Ce	ell 3	
Timeslot Number		0)		8	()	8	3	(0	8	8
	1	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1			Char	nnel 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 _{offset}		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	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,28</u> <u>3,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>
\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 _{s,n}	dB	C1, C2	2: 0; C1, C1, C5:0	C3:0; C ; C1, C6:	1,C4:0 0	C C2,C	2, C1: 0 4:0C2, 0	; C2, C3: C5:0; C2,	0; C6:0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst1 _s	dB			0				0		0			
Treselection	S			0				0		0			
Sintrasearch	dB		not	sent			not	sent			not	sent	
Sintersearch	dB		not	sent			not	sent			not	sent	
			Ce	ll 4			Ce	ll 5			Ce	ell 6	
Timeslot		C)	1	8	()	8	3		0	1	8
		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 _{offset}		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	- 4 <u>,283</u> ,12	- 4,28 <u>3,12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4,28 3 , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>
\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 _{s,n}	dB	C4, C ⁷	1: 0; C4, C4, C5:0	C2:0; C4; C4; C6;	4,C3:0 0	C5, C	1: 0; C5, C5, C4:0;	C2:0; C5; C5; C6;	5,C3:0 0	C6, C	1: 0; C6, C6, C4:0	C2:0; C ; C6, C5:	6,C3:0 0
Qhyst1 _s	dB			0				0				0	
Treselection	S			0				0				0	
Sintrasearch	dB		not	sent			not	sent			not	sent	
Sintersearch	dB		not	sent			not	sent			not	sent	
I _{oc}	dBm/3, 84 MHz						-	70					
Propagation Condition							AW	/GN					

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

A.5.6.2.1.2 1.28Mcps TDD option

(void)

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:

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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_{SI}
 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.

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

A.5.6.2.2.2 1.28Mcps TDD option

(void)

A.6 Dynamic channel allocation

NOTE: This section is included for consistency with numbering with section 6; currently no test covering requirements in this section exists.

A.6A RRC Connection Control

A.6A.1 RRC Connection re-establishment delay

A.6A.1.1 Test Purpose and Environment

A.6A.1.1.1 3.84Mcps TDD option

The purpose is to verify that the RRC connection re-establishment delay is within the specified limits. These tests will verify the requirements in section 6A.1.2.1.

The test parameters are given in table A.6A.1 and table A.6A.2 below. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Parameter	Unit	Value	Comment
Power Control		On	
Active cell		Cell 1	
N313	Frames	20	
N315	Frames	20	
T313	Seconds	0	
T _{SI}	ms	1280	
Monitored cell list size		24	Monitored set shall only include intra frequency neighbours, P-CCPCH RSCP of all cells in the monitored set shall be below –86dBm for this test case except cell 2.
Cell 2		included in monitored set	Cell parameters according table A6.2.
Reporting frequency	Seconds	4	
T1		10	
T2		6	

Table A.6A.1 General test parameters for RRC connection re-establishment delay, Test 1

Parameter	Unit		Ce	ll 1			Ce	ll 2			
Timeslot Number		()	1	8	(C	8	8		
		T1	T2	T1	T2	T1	T2	T1	T2		
UTRA RF Channel			Char	nnel 1			Char	nnel 1			
Number											
PCCPCH_Ec/lor	dB	-3	-3			-3	-3				
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9		
SCH_t _{offset}		0	0	0	0	15	15	15	15		
PICH_Ec/lor				-3	-3			-3	-3		
		-	-	-	-	-	-	-	-		
OCNS		4 <u>,28</u> 3	4 <u>,28</u> 3	4 ,28 3	4 ,28 3	4 ,28 3	4 ,28 3	4 <u>,28</u> 3	4 <u>,28</u> 3		
		<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>		
\hat{I}_{or}/I_{oc}	dB	3	-13	3	-13	5	5	5	5		
I _{oc}	dBm/3. 84 MHz		-70								
PCCPCH_RSCP	dB	-70	-86			-68	-68				
Propagation					AM	/GN					

Table A.6A.2 Cell specific parameters for RRC connection re-establishment delay test, Test 1

 Condition
 NOTE:

 NOTE:
 The DPCH of cell 1 is located in an other timeslot than 0 or 8, at the start of time period T2, the dedicated channel is removed.

Table A.6A.3 General test parameters for RRC connection re-establishment	delay,	Test 2
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Parameter	Unit	Value	Comment
DCH Parameters		DL Reference measurement channel 12.2 kbps	Located in an other TS than 0 or 8
Power Control		On	
Active cell		Cell 1	
N313	Frames	20	
N315	Frames	20	
T313	Seconds	0	
T _{SI}	ms	1280	
Cells in the monitored set		24	P-CCPCH RSCP of all cells in the monitored set below –86dBm
Channels in the monitored set		Channel 1, Channel 2, Channel 3	
Cell 2		Located on channel 2, cell 2 not included in monitored set	Parameters according table A6.4
Reporting frequency	Seconds	4	
T1		10	
T2		6	

Parameter	Unit	Cell 1					Ce	11 2	
	Onic	(0			2	
Timesiot Number		(J	(0	0		0	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel			Char	nel 1			Char	nel 2	
Number									
PCCPCH_Ec/lor	dB	-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t _{offset}		0	0	0	0	15	15	15	15
PICH_Ec/lor				-3	-3			-3	-3
		-	-	-	-	-	-	-	-
OCNS		4 ,28 3	4 ,28 3	4 ,28 3	4 ,28 3	4 ,283	4 ,28 3	4 ,28 3	4 ,28 3
		,12	,12	,12	<u>,12</u>	,12	,12	,12	,12
\hat{I}_{or}/I_{oc}	dB	3	-13	3	-13	5	5	5	5
I _{oc}	dBm/3. 84 MHz	-70							
PCCPCH_RSCP	dB	-70	-86			-68	-68		
Propagation Condition			AWGN						

Table A.6A.4 Cell specific parameters for RRC connection re-establishment delay test, Test 2

NOTE: The DPCH of cell 1 is located in an other timeslot than 0 or 8, at the start of time period T2, the dedicated channel is removed.

A.6A.1.1.2 for1.28Mcps TDD option

The purpose is to verify that the RRC connection re-establishment delay is within the specified limits. These tests will verify the requirements in section 6A.1.2.2.

The test parameters are given in table A.6A.5 and table A.6A.6 below. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table A.6A.5 General test parameters for RRC connection re-establishment delay, T	est 1
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Parameter	Unit	Value	Comment
DCH Parameters		DL Reference measurement	As specified in TS25.102, section
		channel 12.2 kbps	A.2.2.2
Power Control		On	
Active cell		Cell 1	
N313	Frames	20	
N315	Frames	20	
T313	Seconds	0	
T _{SI}	ms	1280	
Monitored cell list size		24	Monitored set shall only include intra
			frequency neighbours
Cell 2		included in monitored set	Cell parameters according table A6.6
Reporting frequency	Seconds	4	
T1		10	
T2		6	

Table A.6A.6 Cell specific parameters for RRC connection re-establishment delay test, Test 1

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Parameter	Unit	Cell 1			Cell 2				
Timeslot Number		()	Dwf	PTS	0		DwPTS	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Char	nel 1		
PCCPCH_Ec/lor	dB	-3			-3				
DwPCH_Ec/lor	dB		0					()
\hat{I}_{or}/I_{oc}	dB	[3]	[-13]			[6]	[6]		
I _{oc}	dBm/1. 28 MHz	-70							
PCCPCH_RSCP	dBm	[-70] [-86] [-67] [-67]							
Propagation		AWGN							

NOTE: The DPCH of cell 1 is located in an other timeslot than 0, at the start of time period T2, the dedicated channel is removed.

Table A.6A.7 General test	parameters for RRC	connection re-establishment	delay,	Test 2
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Parameter	Unit	Value	Comment
DCH Parameters		DL Reference measurement channel 12.2 kbps	As specified in TS25.102, section A.2.2.2
Power Control		On	
Active cell		Cell 1	
N313	Frames	20	
N315	Frames	20	
T313	Seconds	0	
T _{SI}	ms	1280	
Cells in the monitored set		24	
Channels in the monitored set		Channel 1, Channel 2, Channel 3	
Cell 2		Located on channel 2, cell 2 not included in monitored set	Parameters according table A6.8
Reporting frequency	Seconds	4	
T1		10	
T2		6	

Table A.6A.8: Cell specific parameters for RRC connection re-establishment delay test, Test 2

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		()	DwPTS		0		DwPTS	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Char	nel 2		
PCCPCH_Ec/lor	dB	-;	-3			-3			
DwPCH_Ec/lor	dB	0					0		
\hat{I}_{or}/I_{oc}	dB	[3]	[-13]			[6]	[6]		
I _{oc}	dBm/1. 28 MHz	-70							
PCCPCH_RSCP	dBm	[-70]	[-86]			[-67]	[-67]		
Propagation Condition		AWGN							

NOTE: The DPCH of cell 1 is located in an other timeslot than 0, at the start of time period T2, the dedicated channel is removed.

A.6A.1.2 Test Requirements

A.6A.1.2.1 3.84Mcps TDD option

A.6A.1.2.1.1 Test 1

The RRC connection re-establishment 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 of a CELL UPDATE message using the cause "radio link failure".

The RRC connection re-establishment delay shall be less than 1630 ms.

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

NOTE:

N313 is the number in frames of consecutive "out of synch" indications from layer 1 for the established dedicated physical channel before starting timer T313. In this test case N313=20 frames, resulting in 200ms to be taken into account for the test case.

The RRC connection re- establishment delay can be expressed as: $50ms+T_{search} + T_{SI}$ where:

 T_{search} is the time it takes for the UE to search the cell. $T_{search} = 100$ ms in case of a known target cell.

T_{SI} Maximum repetition rate of relevant system information 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 delay of 1.63s in the test case.

A.6A.1.2.1.2 Test 2

The RRC connection re-establishment 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 of a CELL UPDATE message using the cause "radio link failure".

The RRC re-establishment delay shall be less than 3930 ms.

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

NOTE:

N313 is the number in frames of consecutive "out of synch" indications from layer 1 for the established dedicated physical channel before starting timer T313. In this test case N313=20 frames, resulting in 200ms to be taken into account for the test case.

The RRC connection re-establishment delay can be expressed as: $50ms+T_{search}*NF+T_{SI}$ where:

T _{search}	is the time it takes for the UE to search the cell. T_{search} =800 ms in case of an unknown target cell.
NF	is the number of different frequencies in the monitored set. NF=3
T _{SI}	Maximum repetition rate of relevant system information 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 3.93s in the test case.

A.6A.1.2.2 for 1.28Mcps TDD option

A.6A.1.2.2.1 Test 1

The RRC connection re-establishment 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 SYNC-UL in the UpPTS for sending a CELL UPDATE message using the cause "radio link failure".

The RRC connection re-establishment delay shall be less than 1630 ms.

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

NOTE:

N313 is the number in frames of consecutive "out of synch" indications from layer 1 for the established dedicated physical channel before starting timer T313. In this test case N313=20 frames, resulting in 200ms to be taken into account for the test case.

The RRC connection re- establishment delay can be expressed as: $50ms+T_{search} + T_{SI}$ where:

- T_{search} is the time it takes for the UE to search the cell. $T_{search} = 100$ ms in case of a known target cell.
- T_{SI} Maximum repetition rate of relevant system information 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 delay of 1.63s in the test case.

A.6A.1.2.2.2 Test 2

The RRC connection re-establishment 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 SYNC-UL in the UpPTS for sending a CELL UPDATE message using the cause "radio link failure".

The RRC re-establishment delay shall be less than [3930] ms.

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

NOTE:

N313 is the number in frames of consecutive "out of synch" indications from layer 1 for the established dedicated physical channel before starting timer T313. In this test case N313=20 frames, resulting in 200ms to be taken into account for the test case.

The RRC connection re-establishment delay can be expressed as: $50ms+T_{search}*NF+T_{SI}$ where:

 T_{search} is the time it takes for the UE to search the cell. $T_{search} = [800]$ ms in case of an unknown target
cell.NFis the number of different frequencies in the monitored set. NF=3 T_{SI} Maximum repetition rate of relevant system information 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 [3.93]s in the test case.

A.6A.2 Transport format combination selection in UE for 1.28Mcps TDD option

A.6.6A.2.1 Test Purpose and Environment

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

A.6.6A.2.1.1 Interactive or Background, PS, UL: 64 kbps

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

The test parameters are given in Table A.6A.9, A.6A.10 and Table A.6A.11 below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

Details on the UL reference RAB in table A.6A.9 and A.6A.10 can be found in TS 34.108 section "Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH".

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

Table A.6A.9: UL reference RAB, Interactive or Background

Table A.6A.10: UL TFCI

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

Table A.6A.11 General test parameters

Parameter	Unit	Value	Comment
TFCS size		10	
TFCS		UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3,	
		UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7,	
		UL_TFC8, UL_TFC9	
Power Control		On	
TPC step size	dB	1	
Maximum allowed	dBm	21	
UL TX power			
T1	S	30	
T2	S	10	

The test shall be performed in AWGN channel propagation conditions.

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

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

The test shall be performed in the following way:

Before time period T1:

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

During time period T1:

The system simulator shall ensure that the UE output power is commanded to be between 9to 10 dB below the UE Maximum allowed UL TX power.

During time period T2:

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

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

A.6A.2.2 Test Requirements

A.6A.2.2.1 Interactive or Background, PS, UL: 64 kbps

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

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

NOTE:	The delay from the begining of T2 can be expressed as: $T_{ramp} + T_{detect_block} + T_{notify} + T_{L1_proc} + T_{align_TTI}$, where:
T _{ramp}	Margin added for the increase of UE output power to the UE maximum power. A margin of 7 frames (70ms) is used, i.e. 14 TPC commands.
T_{detect_block}	The time needed to detect that UL_TFC8 and UL_TFC9 can no longer be supported, i.e. defines the maximum time to detect that the <i>Limited TFC Set</i> criterion is fulfilled for UL_TFC8 and UL_TFC9. This figure is currently TBD as X and Y in the general requirement, see section 6.4.2, are not finalised yet.
T_{notify}	Equal to [15] ms, the time allowed for MAC to indicate to higher layers that UL_TFC8 and UL_TFC9 can no longer be supported.
T_{modify}	Equal to MAX(T_{adapt_max} , T_{TTI}) = MAX(0, 40)=40ms
T_{adapt_max}	Equals to 0ms for the case without codec.
T_{L1_proc}	Equals 15ms.
T_{align_TTI}	Align with the longest uplink TTI where the new TFC can be selected. The worst case equals 40ms in this test case.
$\mathbf{T}_{\mathrm{TTI}}$	See section 6.4.2. Equals 40 ms in the test case.
T 1 · ·	

This gives a maximum delay of $(70 + T_{detect_{block}} + [15] + 40 + 15 + 40)$ ms from the beginning of T2.

A.7 Timing characteristics

NOTE: This section is included for consistency with numbering with section 7; currently no test covering requirements in this section exists.

A.8 UE Measurements Procedures

A.8.1 TDD intra frequency measurements

A.8.1.1 Event triggered reporting in AWGN propagation conditions

A.8.1.1.1 Test Purpose and Environment

A.8.1.1.1.1 3.84 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

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"change of best cell event" as illustrated in Figure A.8.1. General test parameters are given in the table A.8.1A below and they are signalled from test device. In the measurement control information it is indicated to the UE that eventtriggered 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.8.1B below.

Table A.8.1A: 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 or 8
Power Control		On	
Active cell		Cell 1	
Threshold used	dB	-71	Absolute P-CCPCH RSCP threshold
frequency			for event 1G
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list		24	Measurement control information is
size			sent before T1 starts.
T1	S	10	
T2	S	10	



Figure A.8.1: Illustration of parameters for handover measurement reporting test case

Parameter	Unit		Ce	ll 1			Cell 2			
Timeslot Number		()	8		0		8		
		T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Channel 1 Channel 1			Channel 1 Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t _{offset}		0	0	0	0	15	15	15	15	
PICH_Ec/lor				-3	-3			-3	-3	
OCNS		- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	-Infinity	5	-Infinity	5	
I _{oc}	dBm/3. 84 MHz				-7	70				
PCCPCH_RSCP	dB	-70	-70			-Infinity	-68			
Propagation Condition					AW	/GN				

Table A.8.1B: Cell specific parameters for correct reporting of intra frequency neighbours in AWGN propagation condition

Note: The DPCH of all cells are located in an other timeslot than 0 or 8

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

Deremeter	l Imit	Value	Commont
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 used	dB	[-71]	Absolute P-CCPCH RSCP threshold
frequency			for event 1G
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list		[24]	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	ell 1							
Timeslot Number		()	DwPTS		0		DwPTS			
		T1	T2	T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number			Channel 1				Char	nel 2			
PCCPCH_Ec/lor	dB	-:	-3				3				
DwPCH_Ec/lor	dB			0		0				()
\hat{I}_{or}/I_{oc}	dB	[3]	[3]			-Infinity	[6]				
I _{oc}	dBm/1. 28 MHz				-	70					
PCCPCH_RSCP	dBm	[-70]	[-70]			-Infinity	[-67]				
Propagation Condition					AV	VGN					

NOTE: The DPCH of all cells are located in a timeslot other than 0.

A.8.1.1.2 Test Requirements

A.8.1.1.2.1 3.84Mcps TDD option

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

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

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

A.8.1.1.2.2 1.28Mcps TDD option

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

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

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

A.8.2 TDD inter frequency measurements

A.8.2.1 Correct reporting of neighbours in AWGN propagation condition

A.8.2.1.1 Test Purpose and Environment

A.8.2.1.1.1 for 3.84Mcps TDD option

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

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.8.2A 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.8.2B.

Table A.8.2A: General test parameters for correct reporting of TDD inter frequency 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 or 8
Power Control		On	
Active cell		Cell 1	
Threshold non used	dB	-71	Absolute P-CCPCH RSCP threshold
frequency			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	

Parameter	Unit		Ce	ll 1			Cell 2			
Timeslot Number		()	8		0		8		
		T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Channel 1 Channel 2								
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t _{offset}		0	0	0	0	15	15	15	15	
PICH_Ec/lor				-3	-3			-3	-3	
OCNS		- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	-Infinity	9	-Infinity	9	
I _{oc}	dBm/3. 84 MHz				-7	70				
PCCPCH_RSCP	dB	-70	-70			-Infinity	-64			
Propagation Condition					AW	/GN				

Table A.8.2B: Cell Specific Parameters for Correct Reporting of Neighbours in AWGN Propagation Condition

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NOTE: The DPCH of all cells are located in an other timeslot than 0 or 8

A.8.2.1.1.2 for 1.28Mcps TDD option

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.

Table A.8.2C: General test parameters for correct reporting of TDD inter frequency 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	[-71]	Absolute P-CCPCH RSCP threshold
frequency			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.8.2D Cell Specific Parameters for Correct Reporting of Neighbours in AWGN Propagation Condition

Parameter	Unit		Ce	ll 1		Cell 2				
Timeslot Number		(0 DwPTS		0		DwPTS			
		T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Channel 1				Channel 1 Chan			nel 2	
PCCPCH_Ec/lor	dB	-3			-3					
DwPCH_Ec/lor	dB)			(C	
\hat{I}_{or}/I_{oc}	dB	[3]	[3]			-Infinity	[6]			
I _{oc}	dBm/1. 28 MHz	-70								
PCCPCH_RSCP	dBm	[-70] [-70] -Infinity [-67]								
Propagation Condition		AWGN								

NOTE: The DPCH of all cells are located in a timeslot other than 0.

A.8.2.1.2 Test Requirements

A.8.2.1.2.1 3.84Mcps TDD option

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 5 s from the beginning of time period T2.

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

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

A.8.2.1.2.2 1.28Mcps TDD option

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than [5] s from the beginning of time period T2.

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

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

A.8.3 FDD measurements

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

A.8.3.1.1 Test Purpose and Environment

A.8.3.1.1.1 3.84 Mcps TDD option

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.8.3A 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.8.3B below.

Table A.8.3A: 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 or 8
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	

Table A.8.3B: Cell Specific parameters for Correct reporting of FDD neighbours in AWGN propagation condition

Parameter	Unit		Ce	ll 1		Cell 2			
Timeslot Number		()	8	3	n.a			
		T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number			Char	nnel 1			Char	nnel 2	
CPICH_Ec/lor	dB	n.	a.	n.	a.	-10			
PCCPCH_Ec/lor	dB	-3	-3			-12			
SCH_Ec/lor	dB	-9	-9	-9	-9	-12			
SCH_t _{offset}		0	0	0	0	n.a.			
PICH_Ec/lor				-3	-3	-15			
OCNS	dB	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> . <u>12</u>	- 4,28<u>3</u> ,12	- 4 <u>,283</u> <u>,12</u>	-0,941			
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	-infinty	-2		
I _{oc}	dBm/3. 84 MHz		-7	70			-7	70	
CPICH_RSCP			n.	a.		-infinity	-82		
PCCPCH_RSCP	dB	-70	-70	-70	-70	n.a.			
Propagation Condition			AW	/GN			AW	'GN	

Note: The DPCH of the TDD cell is located in an other timeslot than 0 or 8

A.8.3.1.1.2 1.28 Mcps TDD option

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	

Table A. 8.3D Cell Specific parameters for Correct reporting of FDD neighbours in AWGN propagation condition:

Parameter	Unit		Ce	ll 1		Cell 2		
Timeslot Number		()	Dw	PTS	n.a	n.a.	
		T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nnel 1		Channel 2		
CPICH_Ec/lor	dB	n.	a.	n.	.a.	[-10]	[-10]	
PCCPCH_Ec/lor	dB	-3	-3			[-12]	[-12]	
SCH_Ec/lor	dB					[-12]	[-12]	
PICH_Ec/lor	dB					[-15]	[-15]	
DwPCH_Ec/lor	dB			0	0	n.a.	n.a.	
OCNS	dB	[]	[]			[-0,941]	[-0,941]	
\hat{I}_{or}/I_{oc}	dB	[3]	[3]	[3]	[3]	[-Infinity]	[-2]	
I _{oc}	dBm/3. 84 MHz		-	70		-	70	
CPICH_RSCP			n	.a.		[-Infinity]	[-82]	
PCCPCH_RSCP	dB	[-70]	[-70]			n.a.	n.a.	
Propagation Condition		AWGN				AWGN		

Note: The DPCH of cell 1 is located in a timeslot other than 0.

A.8.3.1.2 Test Requirements

A.8.3.1.2.1 3.84 Mcps TDD option

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 5 seconds from the start of time period T2.

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

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

A.8.3.1.2.2 1.28 Mcps TDD option

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than [5] s from the beginning of time period T2.

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

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

A.9 Measurement Performance Requirements

Unless explicitly stated:

- Reported measurements shall be within defined range in 90 % of the cases.
- Measurement channel is 12.2 kbps as defined in TS 25.102 annex A. This measurement channel is used both in active cell and cells to be measured.
- Cell 1 is the active cell.
- Single task reporting.
- Power control is active.

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.

		1				
Parameter	Unit	Ce	1	Ce	ll 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 <u>,283,1</u> <u>2</u>	- 4 <u>,28<u>3,1</u> <u>2</u></u>	- 4 <u>,283,1</u> <u>2</u>	- 4 <u>,28<u>3,1</u> <u>2</u></u>	
Îor/loc	dB	[]	[]	
loc	dBm/ 3,84 MHz	-7	' 0	-7	' 0	
Range 1:lo Range 2: lo	dBm	-9470 -9450		-9470 -9450		
Propagation condition	-	AW	'GN	AW	AWGN	

Table A.9.1 Intra frequency test parameters for UE RX Measurements

- 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 \hat{Ior}/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. 9.1A Intra frequency test parameters for UE RX Measurements

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		()	Dwl	PTS	0		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			()			()
\hat{I}_{or}/I_{oc}	dB	[3]	[3]			-Infinity	[6]		
I _{oc}	dBm/1. 28 MHz	-70							
Range 1:lo Range 2:lo	dBm	-9470 9450				-9470 -9450			
Propagation condition	AWGN								

Note 1: P-CCPCH_RSCP1,2 \geq -[102] dBm.

- Note 2: / P-CCPCH_RSCP1 PCCPCH_RSCP2 $\leq 20 \text{ dB}$.
- Note 3: |Io P-CCPCH_RSCP $| \leq [20]$ 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 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	Ce	1	Ce	ll 2		
UTRA RF Channel number		Char	nel 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 <u>,283,1</u> <u>2</u>	- 4 <u>,283,1</u> <u>2</u>	- 4 <u>,283,1</u> <u>2</u>	- 4 <u>,283,1</u> <u>2</u>		
Îor/loc	dB	[]	[]		
loc	dBm/ 3,84 MHz	-7	70	-7	70		
Range 1:lo Range 2: lo	dBm	-9470 -9450		-9470 -9450			
Propagation condition	-	AW	'GN	AW	AWGN		

Table A.9.2: Inter frequency test parameters for UE RX Measurements

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 \hat{Ior}/Ioc .

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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.

Table A. 9.2A: Intra frequency test parameters for UE RX Measurements

Parameter	Unit		Ce	ll 1		Cell 2			
Timeslot Number		()	DwF	PTS	0		DwPTS	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nel 1		Channel 2			
PCCPCH_Ec/lor	dB	-3				-3	3		
DwPCH_Ec/lor	dB		0					(0
\hat{I}_{or}/I_{oc}	dB	[3]	[3]			-Infinity	[6]		
I _{oc}	dBm/1. 28 MHz				-7	70			
Range 1:lo Range 2:lo	dBm	-9470 -9450				-9470 -9450			
Propagation condition					AWGN				

- Note 1: P- $CCPCH_RSCP1, 2 \ge -[102]$ dBm.
- Note 2: / P-CCPCH_RSCP1 PCCPCH_RSCP2 $\leq 20 \text{ dB}$.
- Note 3: $|Io -P-CCPCH_RSCP1,2| \leq [20] \text{ dB}.$
- 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 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	Cel	11	Cell 2
Timeslot Number		0	8	n.a
UTRA RF Channel Number		Chanı	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 _{offset}		0	0	n.a.
PICH_Ec/lor			-3	-15
DPCH_Ec/lor	dB	n.a.	n.a.	-15
OCNS	dB	- <u>4.283,12</u>	- <u>3,12</u> 4.28	-1,11
\hat{I}_{or}/I_{oc}	dB	[]	[]	10,5
I _{oc}	dBm/3,84 MHz	-70		Note 5
Range 1:lo	dDm	-94	-70	-9470
Range 2: Io	ubm	-94	-50	-9450
Propagation condition	-	AWO	GN	AWGN

Table A.9.3 CPICH Inter frequency test parameters

Note 1: $CPICH_RSCP1, 2 \ge -114 \text{ dBm}.$

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- 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		-9470	-9470					
Range 2: lo		-9450	-9450					
Propagation condition	-	AW	AWGN					
Note 1: For relative accuracy re	equirement Channel	1_lo –Channel 2_lo	< 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>lor/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		
Îor/loc	DB	-1	-1	
loc	dBm/1.28 MHz	Note 2	Note 2	
Range 1: lo	dBm/1 29 MLI-7	-9470	-9470	
Range 2: lo		-9450	-9450	
Propagation condition	-	AWGN		

Note 1: For relative accuracy requirement / *Channel 1_Io – Channel 2_Io* / < 20 dB.

Note 2: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor $\hat{I}or/Ioc$.

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Isolated impact analysis:

Other core specifications

Test specifications

O&M Specifications

% New A.7.1

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This CR is a correction to an existing function, Timing Advance, where the specification is not sufficiently explicit and where a test case is missing.

It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

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Other comments: # -

Clauses affected:

Other specs

affected:

A.7 Timing characteristics

NOTE: This section is included for consistency with numbering with section 7; currently no test covering requirements in this section exists.

A.7.1 Timing Advance

A.7.1.1 3.84 Mcps TDD option

A.7.1.1.1 Test Purpose and Environment

The purpose of this test is to verify the requirements on timing advance adjustment accuracy and timing advance adjustment delay in section 7.1.1.

The test parameters are given in table A.7.1 and table A.7.1A. The test consists of two successive time periods, with a time duration of T1and T2 respectively. At the start of time duration T1, the UE shall transmit with the Uplink Timing Advance value set to zero, i.e. Timing Advance disabled.

During time period T1, UTRAN shall send an Uplink Physical Channel control message with activation time at the beginning of T2. The Uplink Physical Channel Control 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 T2 is greater than or equal to the RRC procedure delay as defined in [16].

Par	ameter	Unit	Value	Comment		
DCH p	barameters		DL Reference Measurement	As specified in TS 25.102 section A.2.2		
David						
Powe	er Control		<u>Un</u>			
Target qu	<u>iality value on</u>	BLER	<u>0.01</u>			
	DTCH					
<u>Initial</u>	<u>Timing</u>		<u>0</u>	IE "Uplink timing advance" value zero or		
conditions	Advance value			IE "Uplink timing advance control" value		
				disabled.		
Final	<u>Timing</u>		<u>5</u>	IE "Uplink timing advance" value set to 5.		
condition	Advance value					
Monitore	<u>d cell list size</u>		<u>6 TDD neighbours on Channel 1</u>			
	<u>T_{SI}</u>	S	<u>1.28</u>	The value shall be used for all cells in the		
				test.		
<u>T1</u>		<u>S</u>	<u>5</u>			
	<u>T2</u>	<u>s</u>	<u>5</u>			

Table A.7.1: General test parameters for Timing Advance test

Parameter	Unit		Cel	11						
DL timeslot number		<u>0</u>		2						
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>					
UTRA RF Channel		Channel 1								
Number										
PCCPCH_Ec/lor	<u>dB</u>	-3		<u>n</u> .	. <u>a.</u>					
<u>SCH_Ec/lor</u>	<u>dB</u>	-9		<u>n</u>	. <u>a.</u>					
<u>SCH_t_{offset}</u>	<u>dB</u>	<u>0</u>		<u>n.a.</u>						
DPCH_Ec/lor	<u>dB</u>	<u>n.a</u>	<u>ı.</u>	Note 1						
OCNS_Ec/lor	<u>dB</u>	<u>-3,</u> 1	2	No	<u>te 2</u>					
\hat{I}_{or}/I_{oc}	<u>dB</u>		<u>3</u>							
I _{oc}	<u>dBm/</u> <u>3,84</u> <u>MHz</u>		<u>-7(</u>	<u>0</u>						
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.										

Table A.7.1A: Cell specific test parameters for Timing Advance test

A.7.1.1.2 Test Requirements

The UE shall apply the signalled Timing Advance value to the UL DPCH transmission timing at the designated activation time, i.e the beginning of time period T2. The Timing Advance adjustement accuracy shall be within the limits specified in section 7.1.1.2.

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

A.7.1.2 1.28 Mcps TDD option

Void

A.7.2 Cell synchronization accuracy

NOTE: This section is included for consistency with numbering with section 7; currently no test covering requirements in section 7.2 exists.

A.7.3 UE Transmit Timing for 3.84 Mcps TDD option

NOTE: This section is included for consistency with numbering with section 7; currently no test covering requirements in section 7.3 exists.

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Consequences if not approved: # Requirements on Timing Advance incomplete. Isolated Impact Analysis: This CR is a correction to a function, Support for Timing Advance, where specification is ambiguous or not sufficiently explicit. It would not affect implementations behaving like indicated in the CR, wo affect implementations supporting the corrected functionality otherwise.						here the २, would				
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7 Timing characteristics

7.1 Timing Advance (TA) requirements

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 moving-UE_x the UTRAN measures "RX Timing deviation". The measurements are reported to higher layers, where timing advance values are calculated and signaled to the UE. The measurements for are timing advance is defined in 3GPP-TS_25.225 "Physical Layer Measurements (TDD)", the requirements on the and measurement accuracies is are specified in clause 11.2.9 "RX Timing Deviation" section 9. The UE shall adjust the timing of its transmissions within ± 0.5 chip of the signalled timing advance value.

7.1.1.2 Requirements

7.1.1.2.1 Timing Advance adjustement accuracy

The UE shall adjust the timing of its transmissions with an accuracy better than or equal to ± 0.5 chip to the signalled timing advance value.

7.1.1.2.2 Timing Advance adjustement 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.

 $\underline{D}_{\underline{TA}}$ equals the RRC procedure delay of the RRC message implying an adjustement of the timing advance as defined in $\underline{TS25.331}$ section 13.5.

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A.5.2 TDD/FDD Handover

NOTE: This section is included for consistency with numbering with section 5; currently no test covering requirements in sections 5.2.2.1 and 5.2.2.2 exists.

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, A.5.2A and A.5.2B 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 par	rameters		DL Reference Measurement	As specified in TS 25.102 section A.2.2			
			<u>Channel 12.2 kbps</u>				
Power	<u>Control</u>		<u>On</u>				
<u>Target qual</u> DT	<u>ity value on</u> CH	<u>BLER</u>	<u>0.01</u>				
Initial	Active cell		Cell 1	TDD cell			
conditions	<u>Neighbour</u> <u>cell</u>		<u>Cell 2</u>	FDD cell			
Final condition	Active cell		<u>Cell 2</u>	FDD cell			
H	CS		Not used				
<u>(</u>	<u>)</u>	<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be			
				used for all cells in the test.			
Hysteresis		<u>dB</u>	<u>3</u>	Hysteresis parameter for event 2B			
lime to Trigger		<u>ms</u>	<u> 0</u>				
Absolute threshold used frequency		<u>dBm</u>	<u>-71</u>	Applicable for Event 2B			
Threshold non-used frequency		<u>dBm</u>	<u>-80</u>	Applicable for Event 2B			
W used f	requency		1	Applicable for Event 2B			
W non-use	d frequency		<u>1</u>	Applicable for Event 2B			
Filter co	efficient		0				
Monitored cell list size			6 TDD neighbours on Channel 1 6 FDD neighbours on Channel 2				
<u>T_{SI}</u>		<u>S</u>	1.28	The value shall be used for all cells in the test.			
Ī	1	S	5				
Ī	2	S	15				
T3		S	5				

Table A.5.2: General test parameters for TDD/FDD handover

Parameter	Unit			Cel	11					
DL timeslot number			0			2				
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>			
UTRA RF Channel				Chan	nol 1					
<u>Number</u>										
PCCPCH_Ec/lor	dB		<u>-3</u>		<u>n.a.</u>					
SCH_Ec/lor	dB		<u>-9</u>			<u>n.a.</u>				
<u>SCH_t_{offset}</u>	<u>dB</u>		<u>0</u>			<u>n.a.</u>				
DPCH_Ec/lor	<u>dB</u>		<u>n.a.</u>		Not	<u>e 1</u>	<u>n.a.</u>			
OCNS_Ec/lor	<u>dB</u>	-3.12			Note 2 n.		<u>n.a.</u>			
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>5</u>	<u>-</u>	<u>1</u>	<u>5</u>	<u>-</u>	<u>1</u>			
PCCPCH RSCP	dBm	-68	-7	4		n.a.				
<u>I_{oc}</u>	<u>dBm/</u> <u>3,84</u> <u>MHz</u>			<u>-7</u>	<u>0</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 lor.										

Table A.5.2A: Cell 1 specific test parameters for TDD/FDD handover

Table A.5.2B: Cell 2 specific test parameters for TDD/FDD handover

Parameter	Unit	Cell 2						
		<u>T1, T2</u>	<u>T3</u>					
CPICH_Ec/lor	dB	<u>-10</u>						
PCCPCH_Ec/lor	dB	<u>-12</u>						
SCH_Ec/lor	<u>dB</u>	-12						
PICH_Ec/lor	dB	<u>-15</u>						
DPCH_Ec/lor	dB	<u>n.a.</u>	Note 1					
OCNS_Ec/lor	dB	<u>-0.941</u>	Note 2					
CPICH_RSCP	dBm	<u>-83</u>	<u>-77</u>					
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>-3</u>	<u>3</u>					
I _{oc}	<u>dBm/3.</u> 84 MHz	<u>-70</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								

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

3GPP TSG RAN WG4 Meeting #21

R4-020031

Sophia Antipolis, France 28th January - 1st February 2002

	CR-Form-v6.1
[#] 2	25.123 CR 159 # rev - ^{# Current version:} 4.3.0 [#]
For <u>HELP</u> on usin	ng this form, see bottom of this page or look at the pop-up text over the $#$ symbols.
Proposed change aff	ects: # (U)SIM ME/UE X Radio Access Network Core Network
Title: ೫ 0	Correction to reporting requirements in CELL_FACH state (3.84 Mcps TDD option)
Source: ೫ F	RAN WG4
Work item code: ℜ <mark>ा</mark>	TEI Date: 육 1/2/2002
Category: # 4 Us De be	ARelease: %Rel-4se 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)R99e found in 3GPP TR 21.900.REL-5C (release 5)
Reason for change:	# TS25.123 section 8.4. on requirements in CELL_FACH state is misleading in the sense that it contains sections 8.4.2.2.3 and 8.2.2.4 on event-triggered and periodic reporting. These are not in line with 25.331, i.e. RACH reporting triggered by TVM only. The only actual requirements on L1 measurements that apply are the accuracy as specified in Section 9.
Summary of change:	Removal of sections 8.4.2.2.3 and 8.2.2.4 on event-triggered and periodic reporting and introduction section 8.4.2.2.3A RACH reporting in CELL_FACH state.
Consequences if not approved:	 Contradictory specification in 25.331 and 25.123. <u>Isolated impact analysis:</u> This CR is a correction to a function where the specification contains contradictions. It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise
Clauses affected:	# Remove 8.4.2.2.3 and 8.4.2.2.4, Introduce 8.4.2.2.3A
Other specs affected:	 # Other core specifications Test specifications O&M Specifications
Other comments:	¥ -
8.4 Measurements in CELL_FACH State (3.84 Mcps option)

8.4.1 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.

8.4.2 Requirements

8.4.2.1 UE Measurement Capability

The UE shall be able to monitor up to

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

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 idle intervals as described in TS 25.225 are used to find and measure on other 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 $T_{\rm meas}$ on each of the modes and systems, FDD interfrequency cells, TDD interfrequency cells and GSM carriers, for which the corresponding parameter $N_{\rm FDD}$, $N_{\rm TDD}$ and $N_{\rm GSM}$ is set to 1, within the measurement time $T_{\rm meas}$

$$T_{meas} = \left[\left(N_{FDD} + N_{TDD} + N_{GSM} \right) \cdot N_{TTI} \cdot \mathbf{M}_{REP} \cdot 10 \right] \mathrm{ms}$$

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 $N_{TDD} = 0$.

 $N_{FDD} = 0$ or 1. If the UE is capable of FDD and there are FDD cells in the neighbour list $N_{FDD} = 1$ otherwise $N_{FDD} = 0$.

 $N_{GSM} = 0$ 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_{TTI} is the number of frames in each measurement occasion, equal to the length of the largest TTI on the SCCPCH monitored by the UE.

8.4.2.2 TDD intra frequency measurements

During the CELL_FACH state the UE shall continuously measure detected intra frequency cells and search for new intra frequency cells in the monitoring set. In case the network requests the UE to report unlisted cells, the UE shall also search for intra frequency cells outside the monitored set. Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not allocated to transmission nor the time used for inter frequency measurements.

8.4.2.2.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify TDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

8.4.2.2.2 UE P-CCPCH measurement capability

In the CELL_FACH state the measurement period for intra frequency measurements is 200 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing P-CCPCH measurements for 6 detected intra-frequency cells and the UE physical layer shall be capable of reporting 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 measurement intra is defined in the following equation. The detectable cells, that were not measured during that measurement period, shall be measured in the following measurement periods. The measurement accuracy for all measured cells shall be as specified in the section 9.

$$Y_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement TDD}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

X_{basic measurement TDD} is specified in section 8.1.2.2.2

T_{Measurement_Period, Intra} is specified in section 8.1.2.2.2

T_{Intra}: is specified in section 8.1.2.2.2

T_{basic identify TDD, intra} is specified in section 8.1.2.2.2

8.4.2.2.3 Periodic Reporting

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

Void

8.4.2.2.3A RACH reporting

Reporting measurements in the measurement reports sent on the RACH shall meet the requirements in section 9.

8.4.2.2.4 Event Triggered Reporting

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

In CELL_FACH event triggered reporting can only be set for Traffic Volume measurements defined in TS 25.331.

Void

3GPP TSG RAN WG4 Meeting #21

R4-020029

Sophia Antipolis, France 28th January - 1st February 2002

CR-Form-v6.1									
CHANGE REQUEST									
¥ 2	25.123 CR 158 # rev - ^{# Current version: 4.3.0 [#]}								
For HELP on usir	ng this form, see bottom of this page or look at the pop-up text over the st symbols.								
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network									
Title: ដ	Requirements on UE Timeslot ISCP measurements (3.84 Mcps TDD option)								
Source: ೫	RAN WG4								
Work item code: 🛱 🦷	TEI Date: # 1/2/2002								
Category: # U	ARelease: %Rel-4Ise 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)D tetailed explanations of the above categories canREL-4(Release 4)e found in 3GPP TR 21.900.REL-5(Release 5)								
Reason for change: # Currently, section 8 on UE measurement procedures does not contain requirements on UE TS ISCP measurement period and measurement capable Sections 6.3 and 6.4 in TS25.123 on DCA refer to UE TS ISCP measurement for the purpose of DCA and indicate that a UE shall be able to measure ISCF [FFS] TS's averaging over [FFS] frames. In addition, the UE TS ISCP is limited in scope to DCA purposes. It is proposed to introduce new sections with requirements on the UE TS ISCP measurement into section 8 for CELL_DCH and CELL_FACH state. The introduction of these separate sections is necessary because unless P-CCPC RSCP, UE TS ISCP is not tied to Beacon Channels, but can be asked for arbitrary DL TS's									
Summary of change:	Introduction of new sections on UE TS ISCP measurement capability in CELL_DCH and CELL_FACH states. Clarifications to sections on P-CCPCH measurement capability.								
Consequences if not approved:	 Missing requirements on UE TS ISCP measurement period and measurement capability. Misleading specification. 								
	Isolated Impact Analysis:								
	specification is ambiguous or not sufficiently explicit.								
	It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.								
Clauses affected:	8.1.2.2.2, 8.4.2.2.2, 8.1.2.3.2, 8.4.2.3.2, 9.1.1.3, New 8.1.2.2.2A, 8.4.2.2.2A								

Other specs

ℜ - Other core specifications

affected:

Other comments:



Accompanying CR: TS25.123 CR157 in R4-020028

8 UE Measurements Procedures

8.1 Measurements in CELL_DCH State (3.84 Mcps option)

8.1.1 Introduction

This section contains requirements on the UE regarding measurement reporting in CELL_DCH state. The requirements are split in TDD intra frequency, TDD inter frequency, FDD and GSM measurements. These measurements may be used by the UTRAN, e.g. for handover decisions. 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.

8.1.2 Requirements

8.1.2.1 UE Measurement Capability

The UE shall be able to monitor up to:

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

Performance requirements for different types of measurements and different number of cells are defined in the following sections.

The requirements in section 9 are applicable for a UE performing measurements according to this section.

8.1.2.2 TDD intra frequency measurements

During the CELL_DCH state the UE shall continuously measure detected intra frequency cells and search for new intra frequency cells in the monitoring set. In case the network requests the UE to report unlisted cells, the UE shall also search for intra frequency cells outside the monitored set. Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not allocated to transmission nor the time used for inter frequency measurements.

8.1.2.2.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify TDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

8.1.2.2.2 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 detected intra-frequency cells 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 detectable cells, that were not measured during that measurement period, shall be measured in the following measurement periods. The measurement accuracy for all measured cells shall be as specified in the section 9.

$$\mathbf{Y}_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement TDD}} \cdot \frac{\mathbf{T}_{\text{Intra}}}{\mathbf{T}_{\text{Measurement Period, Intra}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

 $X_{\text{basic measurement TDD}} = 6$ (cells)

 $T_{Measurement Period, Intra} = 200 \text{ ms.}$ The measurement period for Intra frequency P-CCPCH <u>RSCP</u> measurements.

 T_{Intra} : This is the minimum time (representing a time corresponding to an integer number of full slots) 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.

 $T_{\text{basic_identify}_{\text{TDD, intra}}} = 800 \text{ ms.}$ 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 8.1.2.6).

8.1.2.2.2A 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 10 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 capable of performing 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.

$$\underline{\qquad} Y_{\text{measurement intra ISCP}} = Floor \left\{ X_{\text{basic measurement ISCP}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra, ISCP}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

 $X_{\text{basic measurement ISCP}} = 10$ (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_{Intra}</u>: This is the minimum time (representing a time corresponding to an integer number of full slots) 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.

8.1.2.2.3 Periodic Reporting

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

8.1.2.2.4 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 8.1.2.2.5 Event Triggered Reporting.

8.1.2.2.5 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, measured without L3 filtering shall be less than T $_{identify intra}$ defined in Section 8.1.2.2.1. When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{identify intra}$ and then enters 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.

8.1.2.3 TDD inter frequency measurements

When signalled by the network during CELL_DCH state, the UE shall continuously measure detected inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

8.1.2.3.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify inter}} = Max \left\{ 5000, T_{\text{basic identify TDD,inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter}}} \cdot N_{Freq} \right\} ms$$

8.1.2.3.2 <u>P-CCPCH RSCP Mm</u>easurement period

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

$$T_{\text{measurement inter}} = Max \left\{ 480, T_{\text{basic measurement TDD inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter}}} \cdot N_{Freq} \right\} ms$$

In case of a dual receiver UE, the measurement period for inter frequency <u>P-CCPCH RSCP</u> measurements is 480 ms.

 $_{Measurement_Period Inter}$ =480 ms. The period used for calculating the measurement period T_{measurement_inter} for inter frequency P-CCPCH <u>RSCP</u> measurements.

 T_{Inter} . This is the minimum time (representing a time corresponding to an integer number of full slots) available for inter frequency measurements during the period $T_{Measurement_Period inter}$ with an arbitrarily chosen timing. The minimum time depends on the channel allocation and is calculated by assuming 2*0.5 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 8.1.2.6).

 $T_{basic_measurement_TDD inter} = 50 \text{ ms.}$ This is the time period used in the equation for defining the measurement period for inter frequency P-CCPCH <u>RSCP</u> measurements.

N_{Freq}: <u>nu</u>mber of TDD frequencies indicated in the interfrequency measurement control information.

8.1.2.3.3 Periodic Reporting

Reported measurements in periodically triggered 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 8.1.2.3.4 Event Triggered Reporting.

8.1.2.3.4 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 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 8.1.2.3.1. When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{identify_inter}$ and then enters the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement_Period Inter}$ when the L3 filter has not been used.

<next changed section>

8.4 Measurements in CELL_FACH State (3.84 Mcps option)

8.4.1 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.

8.4.2 Requirements

8.4.2.1 UE Measurement Capability

The UE shall be able to monitor up to

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

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 idle intervals as described in TS 25.225 are used to find and measure on other 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 $N_{TDD} = 0$.

 $N_{FDD} = 0$ or 1. If the UE is capable of FDD and there are FDD cells in the neighbour list $N_{FDD} = 1$ otherwise $N_{FDD} = 0$.

 $N_{GSM} = 0$ 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_{TTI} is the number of frames in each measurement occasion, equal to the length of the largest TTI on the SCCPCH monitored by the UE.

8.4.2.2 TDD intra frequency measurements

During the CELL_FACH state the UE shall continuously measure detected intra frequency cells and search for new intra frequency cells in the monitoring set. In case the network requests the UE to report unlisted cells, the UE shall also search for intra frequency cells outside the monitored set. Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not allocated to transmission nor the time used for inter frequency measurements.

8.4.2.2.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify TDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

8.4.2.2.2 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 detected intra-frequency cells 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 detectable cells, that were not measured during that measurement period, shall be measured in the following measurement periods. The measurement accuracy for all measured cells shall be as specified in the section 9.

$$Y_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement TDD}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

 $X_{\text{basic measurement TDD}}$ is specified in section 8.1.2.2.2

T_{Measurement_Period, Intra} is specified in section 8.1.2.2.2

T_{Intra}: is specified in section 8.1.2.2.2

T_{basic_identify_TDD, intra} is specified in section 8.1.2.2.2

8.4.2.2.2A 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 10 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 capable of performing Timeslot ISCP measurements on the current serving for at least $Y_{\text{measurement intra ISCP}}$ arbitrary DL timeslots, where $Y_{\text{measurement intra ISCP}}$ 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.

$$\underline{\qquad} Y_{\text{measurement intra ISCP}} = Floor \left\{ X_{\text{basic measurement ISCP}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra, ISCP}}} \right\}$$

whereby function Floor(x) takes the integer part of x,

 $X_{\text{basic measurement ISCP}} = 10$ (arbitrary DL timeslots of the current serving cell)

T_{Measurement_Period, Intra, ISCP} is specified in section 8.1.2.2.2A,

 T_{Intra} is specified in section 8.1.2.2.2A.

8.4.2.2.3 Periodic Reporting

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

8.4.2.2.4 Event Triggered Reporting

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

In CELL_FACH event triggered reporting can only be set for Traffic Volume measurements defined in TS 25.331.

8.4.2.3 TDD inter frequency measurements

When signalled by the network during CELL_FACH state, the UE shall continuously measure detected inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

8.4.2.3.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$\mathbf{T}_{\text{identify inter}} = Max \left\{ 5000, \mathbf{T}_{\text{basic identify TDD, inter}} \cdot \frac{\mathbf{T}_{\text{Measurement Period, Inter}}}{\mathbf{T}_{\text{Inter FACH}}} \cdot N_{Freq} \right\} ms$$

8.4.2.3.2 <u>P-CCPCH RSCP Mm</u>easurement period

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

$$T_{\text{measurement inter}} = Max \left\{ 480, T_{\text{basic measurement TDD inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter FACH}}} \cdot N_{Freq} \right\} ms$$

T_{Measurement_Period Inter} is specified in section 8.1.2.3.2

T _{Inter FACH:} This is the minimum time as full slots that is available for the inter frequency <u>P-CCPCH RSCP</u> measurements during the period $T_{Measurement_Period inter}$ 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*0.5 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.

T_{basic identify TDD,inter} is specified in section 8.1.2.3.2

T_{basic_measurement_TDD inter} is specified in section 8.1.2.3.2

N_{Freq} is specified in section 8.1.2.3.2

If the UE does not need measurement occasions to perform inter-frequency measurements, the measurement period for inter frequency measurements is 480ms.

8.4.2.3.3 Periodic Reporting

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

8.4.2.3.4 Event Triggered Reporting

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

In CELL_FACH event triggered reporting can only be set for Traffic Volume measurements defined in TS 25.331.

<next changed section>

9.1.1.3 Timeslot ISCP

The measurement period for CELL_DCH state can be found in section 8<u>.1</u>. The measurement period for CELL_FACH state can be found in section 8.4.

9.1.1.3.1 Absolute accuracy requirements

Table 9.9 Timeslot_ISCP Intra frequency absolute accuracy

Parameter	Unit	Accur	Conditions	
Farameter	Unit	Normal condition	Extreme condition	lo [dBm]
Timeslot_ISCP	dB	± 6	± 9	-9470
	dB	± 8	± 11	-9450

9.1.1.3.2 Range/mapping

The reporting range for *Timeslot ISCP* is from -115...-25 dBm.

In table 9.10 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Reported value	Measured quantity value	Unit
UE_TS_ISCP_LEV_00	Timeslot_ISCP <-115	dBm
UE_TS_ISCP_LEV_01	-115 ≤ Timeslot_ISCP < -114	dBm
UE_TS_ISCP_LEV_02	-114 ≤ Timeslot_ISCP < -113	dBm
UE_TS_ISCP_LEV_89	-27 ≤ Timeslot_ISCP < -26	dBm
UE_TS_ISCP_LEV_90	-26 ≤ Timeslot_ISCP < -25	dBm
UE_TS_ISCP_LEV_91	-25 ≤ Timeslot_ISCP	dBm

Table 9.10

3GPP TSG RAN WG4 Meeting #21

R4-020028

Sophia Antipolis, France 28th January - 1st February 2002

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Reason for change: # TS25.123 contains section 6 on DCA. However, there is currently no explicit requirement on DCA and it is anticipated that no such explicit requirement will be proposed. As the implementation of the DCA functionality is vendor-specific, only "implicit" requirements on UE and UTRAN measurements and reporting signalling procedures and so on need to be specified for supporting of DCA. It is therefore proposed to move the current text in 6.1 and 6.2 on DCA general system aspects to TR25.922 and include the current requirements on UE TS ISCP measurements from sections 6.3 and 6.4 into Section 8 "UE measurements procedures" (see accompanying CPic)							o explicit nt will be cific, only eporting, CA. General UE TS surement				
Summary of chang	ge:₩	Secti	on 6 "Dy	namic Ch	annel Alloc	ation	" rem	noved			
Consequences if not approved:	ж	Misleading specification with respect to DCA. <u>Isolated Impact Analysis:</u> This CR is a correction to a function, Support for DCA, where the specification is ambiguous or not sufficiently explicit. It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.									
Clauses affected:	ж	6.1.1	; 6.2.1, 6	6.3.1, 6.4. ⁻	1						
Other specs affected:	ж	- Ot - Te - Od	ther core est specif &M Spec	specificat ications ifications	tions a	2					
Other comments:	ж	Acco	mpanvir	a CR's: T	S25.123 C	R158	in R	4-020029			

6 Dynamic channel allocation

6.1 Introduction

6.1.1 3.84 Mcps TDD option

Void

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

Void

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

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 14, but in worst case the UE shall be capable to measure 14 downlink timeslots. In case of "simple UE" [FFS] timeslots shall at least be measured.

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

Void

6.4.2 1.28 Mcps TDD option

In 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>

A.6 Dynamic channel allocation

NOTE: This section is included for consistency with numbering with section 6; currently no test covering requirements in this section exists.

Void

3GPP TSG RAN WG4 Meeting #21

R4-020027

Sophia Antipolis, France 28th January - 1st February 2002

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Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network														
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Reason for change: # Correction to lo conditions: At the RAN4, RAN2 and T1/RF joint meeting on RRM testing during WG4# was agreed that the lo conditions on the accuracy requirements of som measurements need to be clarified to avoid more misunderstandings. S changes have been approved already for 25.133 in R4-011637 in WG4#20. TrCH BER measurement period:							64#18, it ome UE Similar 20.							
Summary of chang	ge:	lo conditions are clarified for the accuracy requirements of P-CCPCH RSCP intra-frequency, UTRA Carrier RSSI inter-frequency and TS ISCP intra-frequency measurements.												
		and dBm	–94 dl –50	om–50 dBm.) dBm	, the ne	g rang ew ra	inges	s are -	-94 dl	Bm	–94 d –70 d	Bm a	and -70
		An o is co and	bvious rrected UTRA	error for from –9 carrier R	r lo co)4 dBn SSI m	nditions n –70 easuren	for L dBm nent u	JTRA to - units	A Carrie -94 dBi are co	er RS m rrecteo	SI rel –50 d d from	ative r Bm. A າ "dB"	neas Iso, T to "dl	urement FS ISCP Bm".
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		It wo	ould no	t affect	imple	mentatio	ons b	ehav	ing lik	e indi	cated	in th	e CF	R, would

	affect implementations supporting the corrected functionality otherwise.
Clauses affected:	% 9.1.1.1.1, 9.1.1.3.1, 9.1.1.4.1, 9.2.1.5
Other specs affected:	 Conter core specifications Test specifications O&M Specifications
Other comments:	¥ -

66

9.1.1 Performance for UE measurements in downlink (RX)

9.1.1.1 P-CCPCH RSCP (TDD)

These measurements consider P-CCPCH RSCP measurements for TDD cells.

The measurement period for CELL_DCH state can be found in section 8.

The accuracy requirements in table 9.1 are valid under the following conditions:

P-CCPCH RSCP \geq -102 dBm.

The received signal levels on SCH and P-CCPCH are according the requirements in paragraph 8.1.2.6

9.1.1.1.1 Absolute accuracy requirements

Table 9.1 P-CCPCH_RSCP absolute accuracy

Baramotor	Unit	Accur	Conditions	
Farameter	Unit	Normal condition	Extreme condition	lo [dBm]
	dBm	± 6	± 9	-9470
P-CCPCH_RSCP	dBm	± 8	± 11	- <mark>94<u>70</u>50</mark>

9.1.1.1.2 Relative accuracy requirements

The P-CCPCH_RSCP intra-frequency relative accuracy is defined as the P-CCPCH_RSCP measured from one cell compared to the P-CCPCH_RSCP measured from another cell on the same frequency.

The accuracy requirements in table 9.2 are valid under the following conditions:

P-CCPCH RSCP1,2 \geq -102 dBm.

$$\left| P - CCPCH RSCP1 \right|_{in \, dB} - P - CCPCH RSCP2 \right|_{in \, dB} \le 20 \, dB$$

Relative Io difference $[dB] \leq relative RSCP$ difference [dB]

The received signal levels on SCH and P-CCPCH are according the requirements in paragraph 8.1.2.6

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 9.2: P-CCPCH_RSC	P intra-frequency relative accuracy
------------------------	-------------------------------------

		Accurac	Conditions		
Parameter	Unit	Normal condition	Extreme condition	lo [dBm]	relative RSCP difference [dbB]
P-CCPCH_RSCP	dBm	±1	±1		<2
		±2	±2	-9450	214
		±3	± 3		>14

The P-CCPCH_RSCP inter-frequency relative accuracy is defined as the P-CCPCH_RSCP measured from one cell compared to the P-CCPCH_RSCP measured from another cell on a different frequency.

The accuracy requirements in table 9.3 are valid under the following conditions:

P-CCPCH RSCP1,2 \geq -102 dBm.

$\left| P - CCPCH RSCP1 \right|_{in dB} - P - CCPCH RSCP2 \right|_{in dB} \le 20 dB$

The received signal levels on SCH and P-CCPCH are according the requirements in paragraph 8.1.2.6

Table 9.3 P-CCPCH_RSCP inter-frequency relative accuracy

Baramotor	Unit	Accura	Conditions	
Falameter	Unit	Normal condition	Extreme condition	lo [dBm]
P-CCPCH_RSCP	dBm	± 6	± 6	-9450

9.1.1.1.3 Range/mapping

The reporting range for *P-CCPCH RSCP* is from -115 ...-25 dBm.

In table 9.4 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9.4

Reported value	Measured quantity value	Unit
P-CCPCH RSCP_LEV _00	P-CCPCH RSCP <-115	dBm
P-CCPCH RSCP_LEV _01	-115 ≤ P-CCPCH RSCP < -114	dBm
P-CCPCH RSCP_LEV _02	-114 ≤ P-CCPCH RSCP < -113	dBm
P-CCPCH RSCP_LEV _89	-27 ≤ P-CCPCH RSCP < -26	dBm
P-CCPCH RSCP_LEV _90	-26 ≤ P-CCPCH RSCP < -25	dBm
P-CCPCH RSCP_LEV _91	-25 ≤ P-CCPCH RSCP	dBm

<next changed section>

9.1.1.3 Timeslot ISCP

The measurement period for CELL_DCH state can be found in section 8.

9.1.1.3.1 Absolute accuracy requirements

Table 9.9 Timeslot_ISCP Intra frequency absolute accuracy

Paramatar	Unit	Accur	Conditions	
Farameter	Unit	Normal condition	Extreme condition	lo [dBm]
Timeslet ISCD	dB <u>m</u>	± 6	± 9	-9470
Timeslot_ISCP	dB <u>m</u>	± 8	± 11	- <mark>94<u>70</u>50</mark>

9.1.1.3.2 Range/mapping

The reporting range for *Timeslot ISCP* is from -115...-25 dBm.

In table 9.10 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Reported value	Measured quantity value	Unit
UE_TS_ISCP_LEV_00	Timeslot_ISCP <-115	dBm
UE_TS_ISCP_LEV_01	-115 ≤ Timeslot_ISCP < -114	dBm
UE_TS_ISCP_LEV_02	-114 ≤ Timeslot_ISCP < -113	dBm
UE_TS_ISCP_LEV_89	-27 ≤ Timeslot_ISCP < -26	dBm
UE_TS_ISCP_LEV_90	-26 ≤ Timeslot_ISCP < -25	dBm
UE_TS_ISCP_LEV_91	-25 ≤ Timeslot_ISCP	dBm

Table 9.10

9.1.1.4 UTRA carrier RSSI

Note: The purpose of measurement is for Inter-frequency handover evaluation.

The measurement period for CELL_DCH state can be found in section 8.

9.1.1.4.1 Absolute accuracy requirement

Absolute accuracy case only one carrier is applied.

Table 9.11 UTRA carrier RSSI Inter frequency absolute accuracy

Parameter	Unit	Accura	Conditions	
Falailletei	Unit	Normal condition	Extreme condition	lo [dBm]
LITRA Corrier DSSI	dB <u>m</u>	± 4	± 7	-9470
	dB <u>m</u>	±6	± 9	- <mark>94<u>70</u>50</mark>

9.1.1.4.2 Relative accuracy requirement

Relative accuracy requirement is defined as active cell frequency UTRAN RSSI compared to measured other frequency UTRAN RSSI level

The accuracy requirements in table 9.12 are valid under the following condition:

| Channel 1_Io -Channel 2_Io | < 20 dB.

Table 9.12 UTRA carrier RSSI Inter frequency relative accuracy

Paramotor	Unit	Accura	Conditions		
Falalletei	Onit	Normal condition	Extreme condition	lo [dBm]	
UTRA Carrier RSSI	dB <u>m</u>	± 7	± 11	-94 <mark>70</mark> 50	

9.1.1.4.3 Range/mapping

The reporting range for UTRA carrier RSSI is from -100 ...-25 dBm.

In table 9.13 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Reported value	Measured quantity value	Unit
UTRA_carrier_RSSI_LEV _00	UTRA carrier RSSI < -100	dBm
UTRA_carrier_RSSI_LEV _01	-100 ≤ UTRA carrier RSSI < –99	dBm
UTRA_carrier_RSSI_LEV _02	-99 ≤ UTRA carrier RSSI < –98	dBm
UTRA_carrier_RSSI_LEV _74	-27 ≤ UTRA carrier RSSI < -26	dBm
UTRA_carrier_RSSI_LEV _75	-26 ≤ UTRA carrier RSSI < -25	dBm
UTRA_carrier_RSSI_LEV _76	-25 ≤ UTRA carrier RSSI	dBm

Table 9.13

<next changed section>

9.2.1.5 Transport Channel BER

The measurement period shall be equal to the [TTI] of the transport channel. Each reported Transport channel BER measurement shall be an estimate of the BER averaged over one measurement period only.

9.2.1.5.1 Accuracy requirement

The average of consecutive Transport channel BER measurements is required to fulfil the accuracy stated in table 9.39 if the total number of erroneous bits during these measurements is at least 500 and the absolute BER value for each of the measurements is within the range given in table9.39.

Parameter	Unit	Conditions	
		absolute DER valuej	Range
TrpBER	-	+/- 10	Convolutional coding $1/3^{rd}$ with any amount of repetition or a maximum of 25% puncturing: for absolute BER value $\leq 15\%$ Convolutional coding $1/2$ with any amount of repetition or no puncturing: for absolute BER value $\leq 15\%$ Turbo coding $1/3^{rd}$ with any amount of repetition or a maximum of 20% puncturing: for absolute BER value $\leq 15\%$.

Table 9.39 Transport channel BER accuracy

9.2.1.5.2 Range/mapping

The *Transport channel BER* reporting range is from 0 to 1.

In table 9.40 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9.40

Reported value	Measured quantity value	Unit
TrCh_BER_LOG_000	Transport channel BER = 0	-
TrCh_BER_LOG_001	-∞ < Log10(Transport channel BER) < -2,06375	-
TrCh_BER_LOG_002	-2,06375≤ Log10(Transport channel BER) < -2,055625	-
TrCh_BER_LOG_003	-2,055625 ≤ Log10(Transport channel BER) < -2,0475	-
TrCh_BER_LOG_253	-0,024375 ≤ Log10(Transport channel BER) < -0,01625	-
TrCh_BER_LOG_254	-0,01625 ≤ Log10(Transport channel BER) < -0,008125	-
TrCh_BER_LOG_255	$-0,008125 \le Log10$ (Transport channel BER) ≤ 0	-

3GPP TSG RAN WG4 Meeting #21

R4-020389

Sophia Antipolis, France 28th January - 1st February 2002

	CR-Form-v4							
CHANGE REQUEST								
ж	25.123 CR 155 # ev 1 # Current version: 4.3.0 #							
For <u>HELP</u> on u	ising this form, see bottom of this page or look at the pop-up text over the $#$ symbols.							
Proposed change	affects: ೫ (U)SIM ME/UE X Radio Access Network Core Network							
Title: ೫	Introduction of TDD/TDD Intra- and Inter-frequency Handover Test Cases (3.84 Mcps TDD option)							
Source: #	RAN WG4							
Work item code: ℜ	TEI Date: 米 1/2/2002							
Category: अ	ARelease: %Rel-4Use 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 canREL-4(Release 4)be found in 3GPP TR 21.900.REL-5(Release 5)							
Reason for change	2: X TDD/TDD handover performance is an essential requirement for proper system operation, but currently, no TDD/TDD handover test cases are specified for the requirements in section 5.1.2.							
Summary of chang	ge: 器 Introduction of TDD/TDD intra- and inter-frequency handover test cases							
Consequences if not approved:	 Essential TDD/TDD intra- and inter-frequency handover requirements in section 5.1.2 are not tested. No verification of handover requirements. Isolated impact analysis: This CR is a correction to an existing function, TDD/TDD handover, where the specification is not sufficiently explicit and where tests are missing. It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise. 							
Clauses affected:	策 <mark>A.5.1.1</mark>							
Other specs affected:	 Conter core specifications Test specifications O&M Specifications 							
Other comments:	¥ -							

A.5 UTRAN Connected Mode Mobility

A.5.1 TDD/TDD Handover

A.5.1.1 3.84 Mcps TDD option

void

A.5.1.1.1 Handover to intra-frequency cell

A.5.1.1.1.1 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 reported in section 5.1.2.1.

The test parameters are given in Table A.5.1 and A.5.1A below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH 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 message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 12.

|--|

Para	meter	Unit	Value	Comment		
DCH parameters			DL Reference Measurement	As specified in TS 25.102 section A.2.2		
			<u>Channel 12.2 kbps</u>			
Power Contro			<u>On</u>			
Target quality	<u>value on</u>	BLER	<u>0.01</u>			
<u>DTCH</u>						
Initial	Active cell		<u>Cell 1</u>			
conditions	<u>Neighbour</u>		<u>Cell 2</u>			
	<u>cell</u>					
Final Active cell			<u>Cell 2</u>			
condition						
HCS			Not used			
<u>0</u>		<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be		
				used for all cells in the test.		
Hysteresis		dB	<u>0</u>			
Time to Trigger		ms	<u>0</u>			
Filter coefficient			<u>0</u>			
Monitored cell list size			6 TDD neighbours on Channel 1			
<u>T1</u>		S	<u>10</u>			
<u>T2</u>		<u>s</u>	<u>10</u>			
<u>T3</u>		S	<u>10</u>			

Table A.5.1A: Cell specific test parameters for Handover to intra-frequency cell

Parameter Parameter	Unit	<u>C</u>	ell 1		<u>Cell 2</u>				
DL timeslot number		<u>0</u>	<u>4</u>			<u>0</u>	<u>5</u>		
		<u>T1 T2 T3</u>	<u>T1 T2</u>	<u>T3</u>	<u>T1</u>	<u>T2 T3</u>	<u>T1 T2</u>	<u>T3</u>	
UTRA RF Channel		<u>Cha</u>	Channel 1 Channel 1						
PCCPCH_Ec/lor	dB	<u>-3</u>	<u>n.a.</u>			<u>-3</u>	n.a	L <u>.</u>	
SCH_Ec/lor	dB	-9	<u></u>						
<u>SCH_t_{offset}</u>	<u>dB</u>	<u>0 n.a. 5 n.a.</u>							
DPCH_Ec/lor	<u>dB</u>	<u>n.a.</u>	Note 1	<u>n.a.</u>		n.a. n.a. Note			
OCNS_Ec/lor	<u>dB</u>	<u>-3.12</u>	Note 2	<u>n.a.</u>	<u>n.a3.12 n.a. Note</u>			Note 2	
\hat{I}_{or}/I_{oc}	<u>dB</u>		<u>1</u> <u>-Inf.</u> <u>3</u> <u>-Inf.</u> <u>3</u>						
PCCPCH RSCP	<u>dBm</u>	<u>-72 n.aInf70 n.a.</u>							
I _{oc}	<u>dBm/</u> <u>3,84</u> <u>MHz</u>	<u>-70</u>							
Propagation Condition				AW	GN				

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

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor .

A.5.1.1.1.2 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.5.1.1.2 Handover to inter-frequency cell

A.5.1.1.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL DCH state in the dual carrier case reported in section 5.1.2.1.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.5.1B and A.5.1C 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 time 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 message with activation time at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. The UL DPCH shall be transmitted in timeslot 12.

				-		
Para	<u>meter</u>	<u>Unit</u>	Value	<u>Comment</u>		
DCH parameter	ers		DL Reference Measurement	As specified in TS 25.102 section A.2.2		
			Channel 12.2 kbps			
Power Control			<u>On</u>			
Target quality	<u>value on</u>	BLER	<u>0.01</u>			
DTCH						
<u>Initial</u>	Active cell		<u>Cell 1</u>			
conditions	Neighbour		<u>Cell 2</u>			
	cell					
Final	Active cell		<u>Cell 2</u>			
condition						
HCS			Not used			
0		dB	<u>0</u>	Cell individual offset. This value shall be		
_				used for all cells in the test.		
<u>Hysteresis</u>		dB	<u>0</u>	Hysteresis parameter for event 2C		
Time to Trigge	<u>er</u>	<u>ms</u>	<u>0</u>			
Threshold non-used		dBm	<u>-80</u>	Applicable for Event 2C		
frequency						
W non-used frequency			<u>1</u>	Applicable for Event 2C		
Filter coefficient			<u>0</u>			
Monitored cell list size			6 TDD neighbours on Channel 1			
			6 TDD neighbours on Channel 2			
<u>T_{si}</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>10</u>			
<u>T2</u>		<u>s</u>	<u>10</u>			
<u>T3</u>			S		<u>10</u>	

Table A.5.1B: General test parameters for Handover to inter-frequency cell

TableA.5.1C: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	C	Cell 1 Cell 2						
DL timeslot number		0 4				2			
		<u>T1 T2 T3</u>	<u>1 T2 T3 T1 T2 T3 T1 T2 T3 T1 T2 T3 T1 T2 T3</u>						
<u>UTRA RF Channel</u> Number		<u>Cha</u>	<u>Channel 1</u> <u>Channel 2</u>						
PCCPCH_Ec/lor	dB	-3	<u>n.a.</u>			<u>-3</u>	n.a	l <u>.</u>	
SCH_Ec/lor	dB	-9	<u>-9 n.a9 n.a.</u>						
<u>SCH_t_{offset}</u>	<u>dB</u>	<u>0</u>	<u>0 n.a. 5 n.a.</u>						
DPCH_Ec/lor	dB	<u>n.a.</u>	n.a. Note 1 n.a. n.a. n.a. Note					Note 1	
OCNS_Ec/lor	dB	<u>-3.12</u>	-3.12 Note 2 n.a. n.a3.12 n.a. Note 2						
\hat{I}_{or}/I_{oc}	<u>dB</u>		<u>1 -Inf. 7 -Inf. 7</u>						
PCCPCH RSCP	<u>dBm</u>	<u>-72</u>	<u>n.a.</u>		<u>-Inf.</u>	<u>-66</u>	<u>n.a</u>	l <u>.</u>	
<u>I_{oc}</u>	<u>dBm/</u> <u>3,84</u> <u>MHz</u>	<u>-70</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 lor .

A.5.1.1.2.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 40 ms from the beginning of time period T2.

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

3GPP TSG RAN WG4 Meeting #21

R4-020023

Sophia Antipolis, France 28th January - 1st February 2002

CR-Form-v6.1										
	CHANGE REQUEST									
[#] 25	5.123 CR 152 # rev - ^{# Current version: 3.8.0 [#]}									
For <u>HELP</u> on using	g this form, see bottom of this page or look at the pop-up text over the $#$ symbols.									
Proposed change affe	ects: # (U)SIM ME/UE X Radio Access Network Core Network									
Title: # Co	orrections to OCNS level settings in Annex A									
Source: ೫ R/	AN WG4									
Work item code: #	Date:									
Category: # F Use Det be f	Release: # R99e 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)R99tailed explanations of the above categories canREL-4found in 3GPP TR 21.900.REL-5									
	different in FDD, where the SCH is sent during the 256 chip period at the beginning of the time slot when the P-CCPCH is inactive. This particular nature of SCH as discontinous signal in UTRA TDD must be taken into account when specifying the OCNS level settings on beacon time slots in Annex A. This is not the case with the current OCNS=-4.28dB. With PCCPCH_Ec/lor=-3dB (1/2 lor) and SCH_Ec/lor=-9dB (1/8 lor), the current OCNS=10*log10(3/8)=-4.28dB value in the table seems to be ok at first glance. But: SCH_Ec/lor=-9dB is an "instantaneous" one, i.e9dB averaged over the 256 chips period when the SCH is present and -Inf when absent Therefore, the current OCNS=-4.28 in the tables is only correct during 1/10 of the TS, i.e. when the SCH is present. It should be at -3dB during the remaining 9/10 of the TS. Basically it means, that the lor in all the 25.123 Annex A test cases doesn't work out right now, i.e. 9/10th of a timeslot, 1/8th to full lor is missing.									
Summary of change: ₩	 CCNS level setting on beacon timeslots corrected from -4.28 to -3.12dB in Annex A test cases. SCH_Ec/lor averaging period defined as the 256 chip period when the SCH is present in the time slot. The new OCNS setting is derived from converting the instantaneous SCH_Ec/lor = -9dB into an average over a whole TS, i.e19dB or 1/8*1/10. Then, OCNS yields as 10*log10(1/2-1/8*1/10)=10*log10(39/80)=-3.12dB. This would mean, that during the 256 chips when the SCH is present in the TS, we would be slightly above full lor, i.e. 1/8th-1/80th=9/80th (<0.5dB). This should not be a problem for testing tough and is preferable over not having the full lor, especially taking into account the non-orthogonal nature of SCH interference. 									
Consequences if # not approved:	* Test cases incorrect with respect to specified power levels on beacon channels. Isolated impact analysis:									

	This CR is a correction to a function, where the specification contains contradictions. It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.
Clauses affected: Other specs affected:	 3.2, A.4, A.5, A.6, A.6A, A.8, A.9 Other core specifications Test specifications O&M Specifications
Other comments:	₩ -

3.2 Symbols

For the purposes of the present document, the following symbols apply:

[...] Values included in square bracket must be considered for further studies, because it means that a decision about that value was not taken.

$\frac{DPCH_E_c}{I_{or}}$	The ratio of the transmit energy per PN chip of the DPCH to the total transmit power spectral density at the Node B antenna connector.
	Average energy per PN chip.
$\frac{E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for different fields or physical channels to the total transmit power spectral density at the Node B antenna connector.
I	The total received power density, including signal and interference, as measured at the UE antenna connector.
I _{oc}	The power spectral density of a band limited white noise source (simulating interference from other cells) as measured at the UE antenna connector.
I _{or}	The total transmit power spectral density of the down link at the Node B antenna connector.
Î _{or}	The received power spectral density of the down link as measured at the UE antenna connector.
$\frac{OCNS_E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for the OCNS to the total transmit power spectral density at the Node B antenna connector.
$\frac{PICH_E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for the PICH to the total transmit power spectral density at the Node B antenna connector.
$\frac{PCCPCH_E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for the PCCPCH to the total transmit power spectral density at the Node B antenna connector.
$\frac{SCH_E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for the SCH to the total transmit power spectral density at the Node B antenna connector. <u>The transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.</u>

PENALTY_TIME	Defined in TS 25.304
Qhyst	Defined in TS 25.304
Qoffset _{s,n}	Defined in TS 25.304
Qqualmin	Defined in TS 25.304
Qrxlevmin	Defined in TS 25.304
Sintersearch	Defined in TS 25.304
Sintrasearch	Defined in TS 25.304
SsearchRAT	Defined in TS 25.304
T1	Time period 1
T2	Time period 2
TEMP_OFFSET	Defined in TS 25.304
Treselection	Defined in TS 25.304
UE_TXPWR_MAX_RACH	Defined in TS 25.304

< Next changed section >

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.

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.

Table A.4.1: 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 condition	Active cell		Cell2			
	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.		
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 _{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	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 _{offset}		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	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>
\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 _{s,n}	dB	C1, C	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0				1: 0; C2, 22, C5: 0	C3:0; C2; ; C2, C6:	2,C4:0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0: C3, C6:0			
Qhyst1 _s	dB		0				0				(0	
Treselection	S		(0		0				0			
Sintrasearch	dB		not	sent		not sent				not sent			
			Cell 4			Cell 5			Cell 6				
Timeslot		(D	8	8	(0	8	8		0	8	8
		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		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t _{offset}		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	- <u>4,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- <u>4,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- <u>4,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>
\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 _{s,n}	dB	C C4,C	C4, C1: 0; C4, C2:0; C4,C3:0C4, 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 _s	dB		(0			()				0	
Treselection	S		(0			(0			(0	
Sintrasearch	dB	not sent not sent not sent											
I _{oc}	dBm/3, 84 MHz						-7	70					
Propagation Condition			AWGN										

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

A.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 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
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
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 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.

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

	Parameter	Unit	Value	Comment		
Initial	Active cell		Cell1			
condition	tion Neighbour cells		lition Neighbour cells		Cell2, Cell3,Cell4,	
		-				
Final	Active cell		Cell2			
condition						
	HCS		Not used			
UE_T>	(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.		
Access S	Service Class (ASC#0)			Selected so that no additional delay is caused		
- P	ersistence value		1	by the random access procedure. The value		
				shall be used for all cells in the test.		
T _{SI}		S	1.28	The value shall be used for all cells in the test.		
D	RX cycle length	S	1.28	The value shall be used for all cells in the test.		
T1		S	30			
	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 2			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 _{offset}		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	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,28</u> <u>3,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>
\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 _{s,n}	dB	C C1,C	1, C2: 0 4:0C1, 0	; C1, C3: C5:0; C1,	0; C6:0	C C2,C	2, C1: 0; 4:0C2, C	; C2, C3: 5:0; C2,	0; C6:0	C3, C	1: 0; C3, C3, C5:0	C2:0; C3; ; C3, C6:	3,C4:0 0
Qhyst1 _s	dB			0		0						0	
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 6			
Timeslot		C)		В	0 8			0 8				
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1		Channel 2			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 _{offset}		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	- 4 <u>,283</u> 12	- 4 <u>,28</u> 3 12	- 4 <u>,283</u> 12	- 4 <u>,283</u> 12	- 4 <u>,283</u> 12	- 4 <u>,283</u> 12	- 4 <u>,283</u> 12	- 4 <u>,283</u> 12	- 4 <u>,283</u> 12	- 4 <u>,283</u> 12	- 4 <u>,283</u> 12	- 4 <u>,283</u> 12
÷ /*	10	,12	0,12	,12	,12	,12	,12	,12	,12	,12	,12	,12	.12
I_{or}/I_{oc}	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-76	-76	00.0.0	4.00.0	-76	-76	00.0.0	- 00-0	-/6	-/6	00.0.0	0.00.0
Qoffset1 _{s,n}	dB	C4, C ⁴	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 _s	dB			0		0			0				
Ireselection	S			0		0					0		
Sintrasearch	dB		not sent						not sent not sent				
Sintersearch	dB		not sent not sent not sent										
I _{oc}	dBm/3, 84 MHz		-70										
Propagation Condition			AWGN										

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

A.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 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:

TevaluateTDDA DRX cycle length of 1280ms is assumed for this test case, this leads to a Tevaluate TDD of 6.4s
according to Table 4.1 in section 4.2.2.7.TSIMaximum 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.

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

A.4.2.3 Scenario 3: TDD/FDD cell re-selection

A.4.2.3.1 Test Purpose and Environment

This test is to verify the requirement for the TDD/FDD cell re-selection delay reported in section 4.2.2.

This scenario implies the presence of 1 TDD and 1 FDD cell as given in Table A.4.5 and A.4.6.

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.4.5: General test parameters for the TDD/FDD cell re-selection

	Parameter	Unit	Value	Comment			
Initial	Active cell		Cell1	TDD cell			
condition	Neighbour cells		Cell2	FDD cell			
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.			
Access - F	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 _{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				
	T2	S	15				

Parameter	Unit		Ce	ll 1		Cell 2		
Timeslot Number		()	5	3	n.a	n.a.	
		T1	T2	T 1	T 2	T 1	T 2	
UTRA RF Channel Number			Char	nnel 1		Channel 2		
CPICH_Ec/lor	dB	n.	a.	n.	a.	-10	-10	
PCCPCH_Ec/lor	dB	-3	-3			-12	-12	
SCH_Ec/lor	dB	-9	-9	-9	-9	-12	-12	
SCH_t _{offset}		0	0	0	0	n.a.	n.a.	
PICH_Ec/lor	dB			-3	-3	-15	-15	
OCNS_Ec/lor	dB	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	-0,941	-0,941	
\hat{I}_{or}/I_{oc}	dB	3	-2	3	-2	-2	3	
I _{oc}	dBm/3.8 4 MHz	-70						
CPICH_RSCP	dBm	n.	a.	n.	a.	-82	-77	
PCCPCH_RSCP	dBm	-70	-75			n.a.	n.a.	
Cell_selection and reselectionquality _measure			CPICH	_RSCP		CPICH	_RSCP	
Qrxlevmin	dBm		-1	02		-1	15	
Qoffset1 _{s,n}	dB		C1, C	2: -12		C2, C	1: +12	
Qhyst1₅	dB	0				()	
Treselection	S		(0		()	
Sintersearch	dB		not	sent		not	sent	
Propagation Condition			AW	/GN		AWGN		

Table A.4.6: TDD/FDD cell re-selection

NOTE: The purpose of this test case is to evaluate the delay of the TDD/FDD re-selection process, it is not intended to give reasonable values for a TDD/FDD cell re-selection.

A.4.2.3.2 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 preambles on the PRACH for sending 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: $T_{evaluateFDD}$ + $T_{SI},$ where:

- $T_{evaluateFDD}$ See Table 4.1 in section 4.2.2.
- T_{SI} 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.4.2.4 Scenario 4: inter RAT cell re-selection

A.4.2.4.1 Test Purpose and Environment

This test is to verify the requirement for the UTRAN to GSM cell re-selection delay reported in section 4.3.2.1.
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.4.7, A.4.8, A.4.9.

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

For this test environment the ranking/mapping function indicated in the broadcast of cell 1 shall be in such a way as to enable the UE to evaluate that the TDD cell 1 is better ranked as the GSM cell 2 during T1 and the GSM cell 2 is better ranked than the TDD cell 1 during T2.

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

Table A.4.7: General test parameters for UTRAN to GSM Cell Re-selection

I	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	TDD Cell
condition	Neighbour cell		Cell2	GSM Cell
Final condition	Active cell		Cell2	
DRX cycle length		S	1,28	UTRAN cell
BCCH repetition period (GSM cell)		S	1,87	In GSM the system information is scheduled according to an 8 x (51 x 8) cycle (i.e. a system information message is transmitted every 235 ms). The cell selection parameters in system info 3 and 4 are transmitted at least every second. (GSM 05.02)
	T1	S	15	
	T2	S	15	

Table A.4.8: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit		Cell 1 ((UTRA)			
Timeslot Number		C)		3		
		T1	T2	T1	T2		
UTRA RF Channel Number		Chan	nel 1	1 Channel 1			
PCCPCH_Ec/lor	dB	-3	-3				
SCH_Ec/lor	dB	-9	-9	-9	-9		
SCH_t _{offset}		0	0	0	0		
PICH_Ec/lor	dB			-3	-3		
OCNS_Ec/lor	dB	- 4,28<u>3</u> ,12	- 4,28 <u>3,12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12		
\hat{I}_{or}/I_{oc}	dB	3	-2	3	-2		
I _{oc}	dBm/3, 84 MHz	-7	0	-7	70		
PCCPCH RSCP	dBm	-70	-75				
Propagation Condition		AWGN AW			/GN		
Treselection	S		()			
Ssearch _{RAT}	dB		not	sent			

Table A.4.9: Cell re-selection UTRAN to GSM cell case (cell 2)

		Cell 2 (GSM)				
Parameter	Unit	T1	T2			
Absolute RF Channel Number		ARF	CN 1			
RXLEV	dBm	-80	-70			
RXLEV_ACCESS_MIN	dBm	-100				
MS_TXPWR_MAX_CCH	dBm	30				

NOTE: The purpose of this test case is to evaluate the delay of the TDD/GSM re-selection process, it is not intended to give reasonable values for a TDD/GSM cell re-selection.

A.4.2.4.2 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 LOCATION UPDATING REQUEST message to perform a Location update.

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 UE shall keep a running average of 4 measurements, thus gives 4*1280ms (T_{measureGSM} Table 4.1), means 5.12 seconds can elapse from the beginning of time period T2 before the UE has finished the measurements to evaluate that the GSM cell fulfils the re-selection criteria.

The cell selection parameters in the BCCH of the GSM cell in system info 3 and 4 are transmitted at least every second.

A.5 UTRAN Connected Mode Mobility

A.5.1 TDD/TDD Handover

NOTE: This section is included for consistency with numbering with section 5; currently no test covering requirements in sections 5.1.2.1 and 5.1.2.2 exists.

A.5.2 TDD/FDD Handover

NOTE: This section is included for consistency with numbering with section 5 currently no test covering requirements in sections 5.2.2.1 and 5.2.2.2 exists.

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.

A.5.4 Cell Re-selection in CELL_FACH

NOTE: The cell re-selection delay is sufficiently covered by the test cases proposed in section A.4. The requirements for interruption in FACH message reception in section 5.4 is not tested. If a suitable test is evaluated it may be included in this section.

A.5.4.1 Scenario 1: TDD/TDD cell re-selection single carrier case

A.5.4.1.1 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 5.4.2.2.1. The test parameters are given in Tables A.5.4.1 to A.5.4.4.

	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.				
Access S	ervice Class (ASC#0)			Selected so that no additional delay is caused by				
- Pe	ersistence value	-	1	the random access procedure. The value shall be				
				used for all cells in the test.				
T _{SI}		S	1,28	The value shall be used for all cells in the test.				
	T1	S	15					
	T2	S	15					

Table A.5.4.1: General test parameters for Cell Re-selection in CELL_FACH

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Table A.5.4.2: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	Kbps	24,4
Channel symbol rate	Ksps	12,2
Slot Format #	-	0
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Default Midamble

Table A.5.4.3: 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	Convolutional Coding
Coding Rate	1/2
Rate Matching attribute	256
Size of CRC	16

Table A.5.4.4: Cell specific test parameters for Cell Re-selection in CELL_FACH

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			Char	nnel 1			Char	nnel 1		Channel 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 _{offset}		0	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	- 4 <u>,28</u> 3	- 4 <u>,28</u> 3	- 4 <u>,28</u> 3	- 4 <u>,28</u> 3	- 4 <u>,28</u> 3	- 4 <u>,28</u> 3	- 4 <u>,28</u> 3	- 4 <u>,28</u> 3	- 4 <u>,28</u> 3	- 4 <u>,28</u> 3	- 4 <u>,28</u> 3	- 4 <u>,28</u> 3
		<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>	<u>,12</u>
\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 _{s,n}	dB	C1, C2	: 0; C1, 0 C1, C5:0	C3:0; C1); C1,C6:	,C4:0 0	C2, C1	: 0; C2, 0 22, C5: 0	C3:0; C2 ; C2, C6	,C4:0 :0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 _s	dB			0				0				0	
Treselection				0				0				0	
Sintrasearch	dB		not	sent			not	sent			not	sent	
FACH measurement occasion info			not	sent			not	sent			not	sent	
I _{oc}	dBm/3, 84 MHz						-	70					
Propagation Condition							AW	/GN					
			Ce	ell 4			Ce	ell 5		Cell 6			
Timeslot		(0	į	8		0		8	(0		8
		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		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t _{offset}		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	- <u>4,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>							
\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 _{s,n}	dB	C4, C	1: 0; C4, C4, C5:0	C2:0; C4; C4; C6;	4,C3:0 0	C5, C	1: 0; C5, C5, C4:0	C2:0; C ; C5, C6:	5,C3:0 0	C6, C1	: 0; C6, C6, C4:0	C2:0; C6 ; C6, C5:	,C3:0 0
Qhyst1 _s	dB			0				0				0	
Treselection				0				0				0	
Sintrasearch	dB		not	sent			not	sent			not	sent	
FACH measurement occasion info			not sent				not sent				not sent		
I _{oc}	dBm/3, 84 MHz						-7	70					
Propagation Condition							AW	/GN					

Note: S-CCPCH shall not be located in TS0.

A.5.4.1.2 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 the CELL UPDATE message with cause value "cell reselection" in cell 2.

The cell re-selection delay shall be less than 2,5 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{reselection,intra}=T_{identify intra} + T_{SI}$, where:

T_{identify intra} Specified in 8.4.2.2.1, gives 800 ms for this test case.

T_{SI} 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 2,08s, allow 2,5 s in the test case.

A.5.4.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

A.5.4.2.1 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 the multi carrier case reported in section 5.4.2.2.2. The test parameters are given in Tables A.5.4.4 to A.5.4.8.

Table A.5.4.5: 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_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.				
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 _{SI}		S	1,28	The value shall be used for all cells in the test.				
T1		S	15					
	T2	S	15					

Table A.5.4.6: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	Kbps	24,4
Channel symbol rate	Ksps	12,2
Slot Format #	-	0
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Default Midamble

Table A.5.4.7: 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	Convolutional Coding
Coding Rate	1/2
Rate Matching attribute	256
Size of CRC	16

Table A.5.4.8: Cell specific test parameters for Cell Re-selection in CELL_FACH

Parameter	Unit	Cell 1			Cell 2				Cell 3				
Timeslot Number		(0 8		3 0		8		0 8		3		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1			Char	nnel 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 _{offset}		0	0	0	0	5	5	5	5	10	10	10	10
PICH Ec/lor	dB			-3	-3			-3	-3			-3	-3

	1	1	1	1	1	1	1	1	1	1	1	1	1		
OCNS_Ec/lor	dB	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12		
\hat{I}_{or}/I_{oc}	dB	9	3	9	3	3	9	3	9	-1	-1	-1	-1		
PCCPCH RSCP	dBm	-64	-70			-70	-64			-74	-74		[
Qoffset1 _{s,n}	dB	C1, C2	: 0; C1, 0 C1, C5:0	C3:0; C1); C1,C6:	,C4:0 0	C2, C1	: 0; C2, 0 22, C5: 0	C3:0; C2 ; C2, C6	,C4:0 0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0					
Qhyst1 _s	dB		, (0			. ())		0					
Treselection				0				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			
Inter-frequency TDD measurement indicator			TR	UE			TR	UE			TR	UE			
I _{oc}	dBm/3, 84 MHz		-70												
Propagation Condition			AWGN												
			Cell 4 Cell 5								Cell 6				
Timeslot		(0	5	8		0		8		0	ł	8		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number			Char	nnel 1			Char	nnel 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 _{offset}		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	4,28 3 ,12	4,28 3 ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	4,28 3 ,12	- 4 <u>,283</u> ,12	4,28 3 ,12	- 4 <u>,283</u> ,12	4,28 3 ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,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 _{s,n}	dB	C4, C	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 C5, C4:0; C5, C6:0 C6, C1: 0; C6, C2:0 C6, C1: 0; C6, C1: 0; C6, C2:0 C6, C1: 0; C6, C1: 0; C							C2:0; C6 ; C6, C5:	,C3:0 0				
Qhyst1 _s	dB			0			(0			(0			
Treselection				0			(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			
Inter-frequency TDD measurement indicator		TRUE TRUE TRUE							UE						
I _{oc}	dBm/3, 84 MHz						-7	70							
Propagation Condition			AWGN												

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Note: S-CCPCH shall not be located in TS0.

A.5.4.2.2 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 the CELL UPDATE message with cause value "cell reselection" in cell 2.

The cell re-selection delay shall be less than 7 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{reselection,inter} = T_{identify inter} + T_{SI}$, where:

T_{identify intra} Specified in 8.4.2.3.1, gives 5 s for this test case.

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T_{SI} 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 6,28s, allow 7 s in the test case.

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

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.5.5.1 and A.5.5.2.

Table A.5.5.1: 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 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		-102	The value shall be used for all cells in the test.
Access Se - Pe	ervice Class (ASC#0) rsistence 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 _{SI}	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		Cell 1 Cell 2 Cell						II 3					
Timeslot Number		()		В	(0	1	3	(0		В	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nnel 1			Char	nel 1			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 _{offset}		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	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	
\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 _{s,n}	dB	C1, C	2: 0; C1, C1, C5:0;	C3:0; C ⁷ ; C1, C6:	1,C4:0 0	C2, C	1: 0; C2, 2, C5: 0	C3:0; C2; C2; C2; C2; C2; C2; C2; C2; C2; C2	2,C4:0 0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0: C3, C6:0				
Qhyst1 _s	dB		(0			(C			(0		
Treselection	S		(0			(C		0				
Sintrasearch	dB		not	sent			not	sent			not	sent		
			Ce	ell 4			Ce	II 5			Ce	ll 6		
Timeslot		()		8	(0	1	8	(0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nnel 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 _{offset}		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	- <u>4,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- <u>4,283</u> , <u>12</u>	
\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 _{s,n}	dB	C C4,C	4, C1: 0 3:0C4, 0	; C4, C2: C5:0; C4,	0; C6:0	C5, C	1: 0; C5, C5, C4:0;	C2:0; C5, C6:	5,C3:0 0	C6, C	1: 0; C6, C6, C4:0	C2:0; C0; C6; C6, C5:	6,C3:0 0	
Qhyst1 _s	dB		0)			(0		
Treselection	S		0 0 0											
Sintrasearch	dB		not	sent			not	sent			not	sent		
I _{oc}	dBm/3, 84 MHz						-7	70						
Propagation Condition			AWGN											

Table A.5.5.2: Cell re-selection single carrier multi-cell case

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A.5.5.1.2 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 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
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

 T_{SI} Maximum repetition period of relevant system into blocks that needs to be received by the OE 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 Scenario 2: TDD/TDD cell re-selection multi carrier case

A.5.5.2.1 Test Purpose and Environment

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.5.5.3 and A.5.5.4.

Table A.5.5.3: General test parameters for Cell Re-selection in Multi carrier case

	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	-102	The value shall be used for all cells in the test.
Access S - P	Service 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 _{SI}	S	1.28	The value shall be used for all cells in the test.
DI	RX 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	II 1			Ce	ll 2		Cell 3			
Timeslot Number		0)		В	(0	8	3	(0		8
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1			Char	nnel 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 _{offset}		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	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,28</u> <u>3,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>						
\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 _{s,n}	dB	C C1,C	C1, C2: 0; C1, C3:0; C1,C4:0C1, C5:0; C1, C6:0				2, C1: 0 4:0C2, 0	; C2, C3: C5:0; C2,	0; C6:0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst1 _s	dB		0 0									0	
Treselection	S		0 0							0			
Sintrasearch	dB		not	sent		not sent				not sent			
Sintersearch	dB		not	sent			not	sent			not	sent	
			Ce	ll 4			Ce	ll 5			Ce	ll 6	
Timeslot		0)	1	B		0	8	3		0		8
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1			Char	nnel 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 _{offset}		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	- 4 <u>,283</u> ,12	- 4,28 3,12	- <u>4,283</u> ,12	- <u>4,283</u> ,12	- <u>4,283</u> ,12	- <u>4,283</u> ,12	- <u>4,283</u> ,12	- 4 <u>,283</u> ,12	- <u>4,283</u> ,12	- 4 <u>,283</u> ,12	- <u>4,283</u> ,12	- <u>4,283</u> ,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 _{s,n}	dB	C4, C	1: 0; C4, C4, C5:0	C2:0; C4; C4, C6:	4,C3:0 0	C5, C	1: 0; C5, C5, C4:0	C2:0; C5; C6:	5,C3:0 0	C6, C	1: 0; C6, C6, C4:0	C2:0; C0; C6; C6, C5:	6,C3:0 0
Qhyst1 _s	dB	0 0								0			
Treselection	S									0			
Sintrasearch	dB	not sent not sent not sent											
Sintersearch	dB		not	sent			not	sent			not	sent	
I _{oc}	dBm/3, 84 MHz						-7	70					
Propagation Condition			AWGN										

Table A.5.5.4: Cell re-selection multi carrier multi cell case

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A.5.5.2.2 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 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_evaluateTDDA 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_SIMaximum 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 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

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.5.6.1 and A.5.6.2.

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

Table A.5.6.1: 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 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	-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 _{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	15	
	T2	S	15	

Parameter	Unit		Cell 1 Cell 2							Ce	ll 3			
Timeslot Number		(D		В	(0	1	B		0	1	8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nnel 1			Char	nnel 1			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 _{offset}		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	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	
\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 _{s,n}	dB	C1, C	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				1: 0; C2, 22, C5: 0	C3:0; C2; C2; C2; C2; C2; C2; C2; C2; C2; C2	2,C4:0 :0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0: C3, C6:0				
Qhyst1 _s	dB		(0			(0				0		
Treselection	S		(0			0			0				
Sintrasearch	dB		not	sent			not	sent			not	sent		
			Ce	ell 4			Ce	ell 5			Ce	ell 6		
Timeslot		(0	8	8	(0	1	8	1	0	ł	8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nnel 1			Char	nnel 1	-		Char	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 _{offset}		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	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,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 _{s,n}	dB	C C4,C	C4, C1: 0; C4, C2:0; C4.C3:0C4, C5:0; C4, C6:0			C5, C	1: 0; C5, C5, C4:0;	C2:0; C3; ; C5, C6:	5,C3:0 0	C6, C	1: 0; C6, C6, C4:0	C2:0; C0 ; C6, C5:	6,C3:0 0	
Qhyst1 _s	dB		0 0									0		
Treselection	S	0 0 0												
Sintrasearch	dB	not sent not sent not sent												
I _{oc}	dBm/3, 84 MHz						-7	70						
Propagation Condition			AWGN											

Table A.5.6.2: Cell re-selection single carrier multi-cell case

A.5.6.1.2 **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 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:

A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluate TDD}$ of 6.4s $T_{evaluateTDD}$ according to Table 4.1 in section 4.2.2.7. Maximum repetition period of relevant system info blocks that needs to be received by the UE to T_{SI} 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.

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

A.5.6.2.1 Test Purpose and Environment

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.5.6.3 and A.5.6.4.

 Table A.5.6.3: General test parameters for Cell Re-selection in Multi carrier case

	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	-102	The value shall be used for all cells in the test.
Access S - P	Service 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.
	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	30	
	T2	S	15	

Parameter	Unit	Cell 1 Cell 2						Cell 3					
Timeslot Number		C)	8	B	()	8	3	(0	8	8
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1			Char	nnel 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 _{offset}		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	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,28</u> <u>3,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> <u>,12</u>
\hat{I}_{or}/I_{oc}	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3
PCCPCH RSCP	dBm	-67	-73			-67	-70			-76	-76		
Qoffset1 _{s,n}	dB	C C1,C	C1, C2: 0; C1, C3:0; C2, C1: 0; C2, C3:0; C1,C4:0C1, C5:0; C1, C6:0 C2,C4:0C2, C5:0; C2, C4:0C2, C5:0; C4:0C2, C5:0C2, C5:0; C5:0; C5:0; C4:0C2, C5:0; C5:0; C5:0;					0; C6:0	C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			3,C4:0 0	
Qhyst1 _s	dB		0 0								0		
Treselection	S		0 0 0							0			
Sintrasearch	dB		not	sent			not sent			not sent			
Sintersearch	dB		not	sent			not	sent			not	sent	
			Cell 4 Cell 5								Ce	ll 6	
Timeslot		C)	8	8	()	8	3		0	8	8
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1			Char	nnel 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 _{offset}		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	- 4 <u>,283</u> ,12	- 4,28 3,12	- 4 <u>,283</u> ,12	- <u>4,283</u> ,12	- 4 <u>,283</u> ,12	- 4,28<u>3</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- <u>4,283</u> ,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 _{s,n}	dB	C4, C ²	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0 C5, C1: 0; C5, C1:				1: 0; C5, C5, C4:0;	C2:0; C5; C5; C6;	5,C3:0 0	C6, C	1: 0; C6, C6, C4:0	C2:0; C0; C0; C6, C5:	6,C3:0 0
Qhyst1 _s	dB										0		
Treselection	S		0 0							0			
Sintrasearch	dB		not	sent			not	sent			not	sent	
Sintersearch	dB		not	sent			not	sent			not	sent	
I _{oc}	dBm/3, 84 MHz						-7	70					
Propagation Condition			AWGN										

Table A.5.6.4: Cell re-selection multi carrier multi cell case

A.5.6.2.2 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 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_evaluateTDDA 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_SIMaximum 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.6 Dynamic channel allocation

NOTE: This section is included for consistency with numbering with section 6; currently no test covering requirements in this section exists.

A.6A RRC Connection Control

A.6A.1 RRC connection re-establishment delay

A.6A.1.1 Test Purpose and Environment

The purpose is to verify that the RRC connection re-establishment delay is within the specified limits. These tests will verify the requirements in section 6A.1.2.

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

Table A.6A.1: General test parameters for RRC connection re-establishment delay, Test 1

Parameter	Unit	Value	Comment
Power Control		On	
Active cell		Cell 1	
N313	Frames	20	
N315	Frames	20	
T313	Seconds	0	
T _{SI}	ms	1280	
Monitored cell list size		24	Monitored set shall only include intra frequency neighbours
Cell 2		included in monitored set	Cell parameters according table A6.2.
Reporting frequency	Seconds	4	
T1		10	
T2		6	

Parameter	Unit		Ce	II 1		Cell 1 Cell 2						
Timeslot Number		()	1	8	(C		8			
		T1	T2	T1	T2	T1	T2	T1	T2			
UTRA RF Channel Number			Channel 1 Channel 1									
PCCPCH_Ec/lor	dB	-3	-3			-3	-3					
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9			
SCH_t _{offset}		0	0	0	0	15	15	15	15			
PICH_Ec/lor				-3	-3			-3	-3			
OCNS		- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>							
\hat{I}_{or}/I_{oc}	dB	3	-13	3	-13	5	5	5	5			
I _{oc}	dBm/3. 84 MHz	-70										
PCCPCH_RSCP	dB	-70	-86			-68	-68					
Propagation		AWGN										

Table A.6A.2: Cell specific parameters for RRC connection re-establishment delay test, Test 1

 Condition
 AWGN

 The DPCH of cell 1 is located in an other timeslot than 0 or 8, at the start of time period T2, the
 NOTE: dedicated channel is removed.

Table A.6A.3: General test parameters for	or RRC connection	re-establishment delay	, Test 2
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Parameter	Unit	Value	Comment
DCH Parameters		DL Reference measurement channel 12.2 kbps	Located in an other TS than 0 or 8
Power Control		On	
Active cell		Cell 1	
N313	Frames	20	
N315	Frames	20	
T313	Seconds	0	
T _{SI}	ms	1280	
Cells in the monitored set		24	
Channels in the monitored		Channel 1, Channel 2, Channel 3	
set			
Cell 2		Located on channel 2, cell 2 not included in monitored set	Parameters according table A6.4
Reporting frequency	Seconds	4	
T1		10	
T2		6	

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Parameter	Unit		Ce	1			Cell 2		
Timeslot Number		(0		8		0		3
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nel 1	1 Channel 2				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t _{offset}		0	0	0	0	15	15	15	15
PICH_Ec/lor				-3	-3			-3	-3
OCNS		- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> . <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> , <u>12</u>	- 4 <u>,283</u> <u>,12</u>
\hat{I}_{or}/I_{oc}	dB	3	-13	3	-13	5	5	5	5
I _{oc}	dBm/3. 84 MHz	-70							
PCCPCH_RSCP	dB	-70	-86			-68	-68		
Propagation Condition					AM	/GN			

Table A.6A.4: Cell specific parameters for RRC connection re-establishment delay test, Test 2

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NOTE: The DPCH of cell 1 is located in an other timeslot than 0 or 8, at the start of time period T2, the dedicated channel is removed.

A.6A.1.2 Test Requirements

A.6A.1.2.1 Test 1

The RRC connection re-establishment 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 of a CELL UPDATE message using the cause "radio link failure".

The RRC connection re-establishment delay shall be less than 1630 ms.

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

NOTE:

N313 is the number in frames of consecutive "out of synch" indications from layer 1 for the established dedicated physical channel before starting timer T313. In this test case N313=20 frames, resulting in 200ms to be taken into account for the test case.

The RRC connection re-establishment delay can be expressed as: $50ms+T_{search} + T_{SI}$ where:

- T_{search} is the time it takes for the UE to search the cell. $T_{search} = 100$ ms in case of a known target cell.
- T_{SI} Maximum repetition rate of relevant system information 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 delay of 1.63s in the test case.

A.6A.1.2.2 Test 2

The RRC connection re-establishment 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 of a CELL UPDATE message using the cause "radio link failure".

The RRC connection re-establishment delay shall be less than 3930 ms.

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

NOTE:

N313 is the number in frames of consecutive "out of synch" indications from layer 1 for the established dedicated physical channel before starting timer T313. In this test case N313=20 frames, resulting in 200ms to be taken into account for the test case.

The RRC connection re-establishment delay can be expressed as: $50ms+T_{search}*NF+T_{SI}$ where:

- T_{search} is the time it takes for the UE to search the cell. T_{search} =800 ms in case of an unknown target cell.
- *NF* is the number of different frequencies in the monitored set. NF=3
- T_{SI} Maximum repetition rate of relevant system information 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 3.93s in the test case.

A.7 Timing characteristics

NOTE: This section is included for consistency with numbering with section 7; currently no test covering requirements in this section exists.

A.8 UE Measurements Procedures

A.8.1 TDD intra frequency measurements

A.8.1.1 Event triggered reporting in AWGN propagation conditions

A.8.1.1.1 Test Purpose and Environment

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.8-1. General test parameters are given in the table A.8.1A 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.8.1B below.

Table A.8.1A: General test parameters for correct reporting of intra frequency 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 or 8
Power Control		On	
Active cell		Cell 1	
Threshold used	dB	-71	Absolute P-CCPCH RSCP threshold
frequency			for event 1G
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list		24	Measurement control information is
size			sent before T1 starts.
T1	S	10	
T2	S	10	



Figure A.8.1: Illustration of parameters for handover measurement reporting test case

Table A.8.1B Cell specific parameters for correct reporting of intra frequency neighbours in AWGI
propagation condition

Parameter	Unit		Ce	ll 1			Ce	ll 2	
Timeslot Number		(0	1	8	(C	5	8
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1		Channel 1			
P-CCPCH_Ec/lor	dB	-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t _{offset}		0	0	0	0	15	15	15	15
PICH_Ec/lor				-3	-3			-3	-3
OCNS		- 4 <u>,283</u> , <u>12</u>							
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	-Infinity	5	-Infinity	5
I _{oc}	dBm/3. 84 MHz		-70						
PCCPCH_RSCP	dB	-70	-70			-Infinity	-68		
Propagation Condition					AW	/GN			

NOTE: The DPCH of all cells are located in an other timeslot than 0 or 8

A.8.1.1.2 Test Requirements

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

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

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

A.8.2 TDD inter frequency measurements

A.8.2.1 Correct reporting of neighbours in AWGN propagation condition

A.8.2.1.1 Test Purpose and Environment

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

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.8.2A 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.8.2B.

Table A.8.2A: General test parameters for correct reporting of TDD inter frequency 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 or 8
Power Control		On	
Active cell		Cell 1	
Threshold non used	dB	-71	Absolute P-CCPCH RSCP threshold
frequency			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.8.2B: Cell Specific Parameters for Correct Reporting of inter frequency Neighbours in AWGN Propagation Condition

Parameter	Unit		Ce	ll 1			Ce	ll 2	
Timeslot Number		(0		8)	8	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1 Channel 2			nnel 2				
P-CCPCH_Ec/lor	dB	-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t _{offset}		0	0	0	0	15	15	15	15
PICH_Ec/lor				-3	-3			-3	-3
OCNS		- 4 <u>,283</u> <u>,12</u>							
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	-Infinity	9	-Infinity	9
I _{oc}	dBm/3. 84 MHz	-70							
PCCPCH_RSCP	dB	-70	-70			-Infinity	-64		
Propagation Condition					AW	/GN			

NOTE: The DPCH of all cells are located in an other timeslot than 0 or 8

A.8.2.1.2 Test Requirements

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 5 s from the beginning of time period T2.

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

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

A.8.3 FDD measurements

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

A.8.3.1.1 Test Purpose and Environment

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.8.3A 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.8.3B below.

Table A.8.3A: 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 or 8
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			Ce	ell 2	
Timeslot Number		()	5	8	n	.a		
		T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number			Char	nnel 1		Channel 2			
CPICH_Ec/lor	dB	n.	a.	n.	a.	-1	0		
PCCPCH_Ec/lor	dB	-3	-3			-1	2		
SCH_Ec/lor	dB	-9	-9	-9	-9	-1	2		
SCH_t _{offset}		0	0	0	0	n.	a.		
PICH_Ec/lor				-3	-3	-1	-15		
OCNS	dB	- 4 <u>,283</u> ,12	- 4 <u>,283</u> ,12	- 4,28<u>3</u> ,12	- 4,28<u>3</u> ,12	-0,9	941		
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	- infinity	-2		
I _{oc}	dBm/3. 84 MHz	-70					-	70	
CPICH_RSCP		n.a.			- infinity	-82			
PCCPCH_RSCP	dB	-70	-70	-70	-70	n.	a.		
Propagation Condition			AW	GN			AW	/GN	

Table A.8.3B: Cell Specific parameters for Correct reporting of FDD neighbours in AWGN propagation condition

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NOTE: The DPCH of the TDD cell is located in an other timeslot than 0 or 8

A.8.3.1.2 Test Requirements

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than [5] seconds from the start of time period T2.

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

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

A.9 Measurement Performance Requirements

Unless explicitly stated:

- Reported measurements shall be within defined range in 90 % of the cases.
- Measurement channel is 12.2 kbps as defined in TS 25.102 annex A. This measurement channel is used both in active cell and cells to be measured.
- Cell 1 is the active cell.
- Single task reporting.

Power control is active.

A.9.1 Measurement Performance for UE

If not otherwise stated, the test parameters in table A.9.1 should be applied for UE RX measurements requirements in this clause.

A.9.1.1 TDD intra frequency measurements

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		Channel 1		Chan	nel 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<u>3,1</u> <u>2</u>	- 4 <u>,283,1</u> <u>2</u>	- 4 <u>,283,1</u> <u>2</u>	- 4 <u>,283,1</u> <u>2</u>
Îor/loc	dB	[]	[]
loc	dBm/ 3,84 MHz	-7	'0	-7	'0
Range 1:lo Range 2: lo	dBm	-9470 -9450		-9470 -9450	
Propagation condition	-	AW	GN	AWGN	

Table A.9.1 Intra frequency test parameters for UE RX Measurements

- 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 $\hat{I}or/Ioc$.
- Note 5: The DPCH of all cells are located in an other timeslot than 0 or 8

A.9.1.2 TDD inter frequency measurements

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.

Table A.9.2 Inter free	quency test	parameters for UE	ERX Measurements
------------------------	-------------	-------------------	------------------

Parameter	Unit	Cell 1		Cell 2	
UTRA RF Channel number		Channel 1		Chan	nel 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<u>3,1</u> <u>2</u>	- 4 ,28<u>3,1</u> <u>2</u>	- 4 ,28<u>3,1</u> <u>2</u>	- 4 ,28<u>3,1</u> <u>2</u>
Îor/loc	dB	[]	[]
loc	dBm/ 3,84 MHz	-7	' 0	-7	0
Range 1:lo Range 2: lo	dBm	-9470 -9450		-9470 -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.9.1.3 FDD inter frequency measurements

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.

Paramotor	Unit	Col	11	
Falailletei	Unit	Cei		Cell 2
Timeslot Number		0	8	n.a
UTRA RF Channel Number		Chanı	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 _{offset}		0	0	n.a.
PICH_Ec/lor			-3	-15
DPCH_Ec/lor	dB	n.a.	n.a.	-15
OCNS	dB	- 4.28<u>3,12</u>	- 4.28<u>3,12</u>	-1,11
\hat{I}_{or}/I_{oc}	dB	[]	[]	10,5
I _{oc}	dBm/3,84 MHz	-7	0	Note 5
Range 1:lo	dDm	-94	-70	-9470
Range 2: lo	UDITI	-94	-50	-9450
Propagation condition	-	AW	GN	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

The table A.9.4 and notes 1,2 define the limits of signal strengths, where the requirement is applicable.

	Parameter	Unit	Cell 1	Cell 2						
UTRA	RF Channei number	-	Channel 1 Channel							
	Îor/loc	dB	-1	-1						
	loc	dBm/ 3.84 MHz	Note 2	Note 2						
	Range 1: lo		-9470	-9470						
	Range 2: lo		-9450	-9450						
Pro	pagation condition	-	AWGN							
Note 1:	For relative accuracy re	equirement Channel	1_lo –Channel 2_lo	< 20 dB.						
Note 2:	loc level shall be adjust	ted according the tota	I signal power lo at re	ceiver input and						
	the geometry factor <i>lor/loc</i> .									

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Sophia Antipolis, France 28th January - 1st February 2002

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Category:%FRelease: %R99Use one of the following categories: F (correction)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), C (functional modification of feature)R97(Release 1997)C (ditorial modification)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)											ases:					
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It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected:	೫ New A.7.1
Other specs affected:	 Conter core specifications Test specifications O&M Specifications
Other comments:	೫ -

A.7 Timing characteristics

NOTE: This section is included for consistency with numbering with section 7; currently no test covering requirements in this section exists.

A.7.1 Timing Advance

A.7.1.1 Test Purpose and Environment

The purpose of this test is to verify the requirements on timing advance adjustment accuracy and timing advance adjustment delay in section 7.1.2.

The test parameters are given in table A.7.1 and table A.7.1A. The test consists of two successive time periods, with a time duration of T1and T2 respectively. At the start of time duration T1, the UE shall transmit with the Uplink Timing Advance value set to zero, i.e. Timing Advance disabled.

During time period T1, UTRAN shall send an Uplink Physical Channel control message with activation time at the beginning of T2. The Uplink Physical Channel Control 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 T2 is greater than or equal to the RRC procedure delay as defined in [16].

Par	rameter	Unit	Value	Comment
DCH p	barameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Powe	er Control		<u>On</u>	
Target quality value on DTCH		<u>BLER</u>	<u>0.01</u>	
Initial conditions	<u>Timing</u> Advance value		<u>0</u>	IE "Uplink timing advance" value zero or IE "Uplink timing advance control" value disabled.
Final condition	<u>Timing</u> Advance value		<u>5</u>	IE "Uplink timing advance" value set to 5.
Monitore	d cell list size		<u>6 TDD neighbours on Channel 1</u>	
<u>T_{SI}</u>		<u>s</u>	<u>1.28</u>	The value shall be used for all cells in the test.
	<u>T1</u>	S	<u>5</u>	
	<u>T2</u>	S	<u>5</u>	

Table A.7.1: General test parameters for Timing Advance test

Table A.7.1A: Cell s	pecific test	parameters for	Timing	Advance test

Parameter	Unit		Cel	1							
DL timeslot number		<u>0</u>		2							
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>						
UTRA RF Channel		Channel 1									
PUCPUH_EC/IOr	<u>ab</u>	<u>-3</u>		<u>n</u>	<u>.a.</u>						
<u>SCH_Ec/lor</u>	<u>dB</u>	<u>-9</u>		<u>n</u>	.a.						
<u>SCH_t_{offset}</u>	<u>dB</u>	<u>0</u>		<u>n.a.</u>							
DPCH_Ec/lor	<u>dB</u>	<u>n.a</u>	<u>.</u>	Note 1							
OCNS_Ec/lor	<u>dB</u>	<u>-3,1</u>	2	No	te 2						
\hat{I}_{or}/I_{oc}	<u>dB</u>		<u>3</u>								
I _{oc}	<u>dBm/</u> <u>3,84</u> MHz		<u>-7(</u>	<u>)</u>							
Propagation Condition			AWO	GN							
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor											

A.7.1.2 Test Requirements

<u>The UE shall apply the signalled Timing Advance value to the UL DPCH transmission timing at the designated</u> activation time, i.e the beginning of time period T2. The Timing Advance adjustement accuracy shall be within the limits specified in section 7.1.2.

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

A.7.2 Cell synchronization accuracy

NOTE: This section is included for consistency with numbering with section 7; currently no test covering requirements in section 7.2 exists.

A.7.3 UE Transmit Timing

NOTE: This section is included for consistency with numbering with section 7; currently no test covering requirements in section 7.3 exists.

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R4-020021

Sophia Antipolis, France 28th January - 1st February 2002

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Consequences if not approved: # Requirements on Timing Advance incomplete. Isolated Impact Analysis: Isolated Impact Analysis: This CR is a correction to a function, Support for Timing Advance, whe specification is ambiguous or not sufficiently explicit. It would not affect implementations behaving like indicated in the CR, affect implementations supporting the corrected functionality otherwise.									/here the R, would		
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7 **Timing characteristics**

7.1 Timing Advance (TA) requirements

7.1.1 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.

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To update timing advance of a moving-UE, the UTRAN measures "RX Timing deviation". The measurements are reported to higher layers, where timing advance values are calculated and signaled to the UE. The measurements for are timing advance is defined in 3GPP-TS_25.225 "Physical Layer Measurements (TDD)", the requirements on the and measurement accuracies is are specified in clause 11.2.9 "RX Timing Deviation" section 9. The UE shall adjust the timing of its transmissions within ±0.5 chip of the signalled timing advance value.

7.1.2 Requirements

7.1.2.1 Timing Advance adjustement accuracy

The UE shall adjust the timing of its transmissions with an accuracy better than or equal to ± 0.5 chip to the signalled timing advance value.

7.1.2.2 Timing Advance adjustement 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.

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A.5 UTRAN Connected Mode Mobility

A.5.1 TDD/TDD Handover

NOTE: This section is included for consistency with numbering with section 5; currently no test covering requirements in sections 5.1.2.1 and 5.1.2.2 exists.

A.5.2 TDD/FDD Handover

NOTE: This section is included for consistency with numbering with section 5; currently no test covering requirements in sections 5.2.2.1 and 5.2.2.2 exists.

A.5.2.1 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 5.2.2.1.

The test parameters are given in Table A.5.2, A.5.2A and A.5.2B 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].

Parar	notor	Unit	Value	Comment			
	amotore	<u>01111</u>	DI Poforonco Moscuromont	As specified in TS 25 102 section A 2.2			
DCITPAL	ameters		Channel 12.2 kbps	As specified in 13 25.102 section A.2.2			
Bower	Control						
Power Control							
larget quality value on		BLER	0.01				
<u>DI</u>	<u>UH</u>		0.11.4				
Initial	Active cell		<u>Cell 1</u>				
conditions	<u>Neighbour</u>		<u>Cell 2</u>	<u>FDD cell</u>			
	cell						
<u>Final</u>	Active cell		<u>Cell 2</u>	FDD cell			
condition							
HC	<u>28</u>		Not used				
0		dB	<u>0</u>	Cell individual offset. This value shall be			
				used for all cells in the test.			
Hysteresis		dB	3	Hysteresis parameter for event 2B			
Time to	Trigger	ms	0				
Absolute thr	eshold used	dBm	-71	Applicable for Event 2B			
frequ	ency						
Threshold	non-used	dBm	-80	Applicable for Event 2B			
frequ	ency						
W used fi	requency		1	Applicable for Event 2B			
W non-used	d frequency		1	Applicable for Event 2B			
Filter co	efficient		0				
Monitored of	cell list size		6 TDD neighbours on Channel 1				
			6 FDD neighbours on Channel 2				
T	SI	s	1.28	The value shall be used for all cells in the			
	<u>×.</u>	-		test.			
Т	1	s	5				
T	2	S	15				
T	3	S	5				

Table A.5.2: General test parameters for TDD/FDD handover

Table A.5.2A: Cell 1 specific test parameters for TDD/FDD handover

Parameter	Unit	<u>Cell 1</u>										
DL timeslot number			<u>0</u>			2						
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>					
UTRA RF Channel				Chan	nol 1							
<u>Number</u>												
PCCPCH_Ec/lor	<u>dB</u>		<u>-3</u>			<u>n.a.</u>						
<u>SCH_Ec/lor</u>	<u>dB</u>		<u>-9</u>			<u>n.a.</u>						
<u>SCH_t_{offset}</u>	<u>dB</u>		<u>0</u>			<u>n.a.</u>						
DPCH_Ec/lor	<u>dB</u>		<u>n.a.</u>		Not	<u>te 1</u>	<u>n.a.</u>					
OCNS_Ec/lor	<u>dB</u>		<u>-3.12</u>		Not	<u>e 2</u>	<u>n.a.</u>					
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>5</u>	<u>-</u> :	<u>1</u>	<u>5</u>	<u>1</u>						
PCCPCH RSCP	<u>dBm</u>	<u>-68</u>	-7	4	n.a.							
7	<u>dBm/</u>											
I _{oc}	<u>3,84</u>			-70	<u>)</u>							
	MHz											
Propagation Condition				AWO	<u>GN</u>							
Note 1: The DPCH level is c	controlled	by the pow	ver control	loop								
Note 2: The power of the O	CNS char	nnel that is	added sha	II make the	total pow	er from the	e cell to					
be equal to lor .												

Parameter	Unit	Cell 2		
		<u>T1, T2</u>	<u>T3</u>	
CPICH_Ec/lor	<u>dB</u>	<u>-10</u>		
PCCPCH_Ec/lor	<u>dB</u>	<u>-12</u>		
<u>SCH_Ec/lor</u>	<u>dB</u>	<u>-12</u>		
PICH_Ec/lor	<u>dB</u>	<u>-15</u>		
DPCH_Ec/lor	<u>dB</u>	<u>n.a.</u>	Note 1	
OCNS_Ec/lor	dB	<u>-0.941</u>	Note 2	
CPICH_RSCP	dBm	<u>-83</u>	<u>-77</u>	
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>-3</u>	<u>3</u>	
I _{oc}	<u>dBm/3.</u> 84 MHz	-70		
Propagation Condition		AWGN		
Note 1: The DPCH level is controlled by the power control loop				
Note 2 : The power of the OCNS channel that is added shall make the total				
power from the cell to be equal to I_{α}				

Table A.5.2B: Cell 2 specific test parameters for TDD/FDD handover

A.5.2.2 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%.

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R4-020017

Sophia Antipolis, France 28th January - 1st February 2002

CHANGE REQUEST				
¥	25.123 CR 146 # rev - ^{# Current version: 3.8.0 [#]}			
For HELP on using this form, see bottom of this page or look at the pop-up text over the # symbols.				
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network				
Title: ដ	Correction to reporting requirements in CELL_FACH state			
Source: ೫	RAN WG4			
Work item code: %	Date:			
Category: # F Release: % R99 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 REL-4 (Release 4) be found in 3GPP TR 21.900. REL-5 (Release 5)				
Reason for change:	X TS25.123 section 8.4. on requirements in CELL_FACH state is misleading in the sense that it contains sections 8.4.2.2.3 and 8.2.2.4 on event-triggered and periodic reporting. These are not in line with 25.331, i.e. RACH reporting triggered by TVM only. The only actual requirements on L1 measurements that apply are the accuracy as specified in Section 9.			
Summary of change: # Removal of sections 8.4.2.2.3 and 8.2.2.4 on event-triggered and periodic reporting and introduction section 8.4.2.2.3A RACH reporting in CELL_FA				
Consequences if not approved:	 Contradictory specification in 25.331 and 25.123. <u>Isolated impact analysis:</u> This CR is a correction to a function where the specification contains contradictions. It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise 			
Clauses affected:	# Remove 8.4.2.2.3 and 8.4.2.2.4, Introduce 8.4.2.2.3A			
Other specs affected:	 # - Other core specifications Fest specifications - O&M Specifications 			
Other comments:	光 -			

8.4 Measurements in CELL_FACH State

8.4.1 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.

8.4.2 Requirements

8.4.2.1 UE Measurement Capability

The UE shall be able to monitor up to

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

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 idle intervals as described in TS 25.225 are used to find and measure on other 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 $N_{TDD} = 0$.

 $N_{FDD} = 0$ or 1. If the UE is capable of FDD and there are FDD cells in the neighbour list $N_{FDD} = 1$ otherwise $N_{FDD} = 0$.

 $N_{GSM} = 0$ 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_{TTI} is the number of frames in each measurement occasion, equal to the length of the largest TTI on the SCCPCH monitored by the UE.

8.4.2.2 TDD intra frequency measurements

During the CELL_FACH state the UE shall continuously measure detected intra frequency cells and search for new intra frequency cells in the monitoring set. In case the network requests the UE to report unlisted cells, the UE shall also search for intra frequency cells outside the monitored set. Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not allocated to transmission nor the time used for inter frequency measurements.

8.4.2.2.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify TDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

8.4.2.2.2 UE P-CCPCH measurement capability

In the CELL_FACH state the measurement period for intra frequency measurements is 200 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing P-CCPCH measurements for 6 detected intra-frequency cells and the UE physical layer shall be capable of reporting 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 measurement intra is defined in the following equation. The detectable cells, that were not measured during that measurement period, shall be measured in the following measurement periods. The measurement accuracy for all measured cells shall be as specified in the section 9.

$$Y_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement TDD}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

X_{basic measurement TDD} is specified in section 8.1.2.2.2

T_{Measurement_Period, Intra} is specified in section 8.1.2.2.2

T_{Intra}: is specified in section 8.1.2.2.2

T_{basic identify TDD, intra} is specified in section 8.1.2.2.2

8.4.2.2.3 Periodic Reporting

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

Void

8.4.2.2.3A RACH reporting

Reporting measurements in the measurement reports sent on the RACH shall meet the requirements in section 9.

8.4.2.2.4 Event Triggered Reporting

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

In CELL_FACH event triggered reporting can only be set for Traffic Volume measurements defined in TS 25.331.

Void
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R4-020015

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Reason for change: # Currently, section 8 on UE measurement procedures does not contain requirements on UE TS ISCP measurement period and measurement capal Sections 6.3 and 6.4 in TS25.123 on DCA refer to UE TS ISCP measurement for the purpose of DCA and indicate that a UE shall be able to measure ISC [FFS] TS's averaging over [FFS] frames. In addition, the UE TS ISCP is limited in scope to DCA purposes. It is proposed to introduce new sections with requirements on the UE TS ISCP measurement into section 8 for CELL_DCH and CELL_FACH state. The introduction of these separate sections is necessary because unless P-CCP/RSCP, UE TS ISCP is not tied to Beacon Channels, but can be asked for arbitrary DL TS's						apability. urements ISCP on CP is not						
Summary of chang	је: Ж	Intro CELI meas	duction DCH sureme	of new s and CE nt capab	section LL_FA pility.	is on UI CH stat	E TS I es. C	ISCF Iarifi	e measurement cations to sec	nt cap tions	on P-CCF	РСН
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		It wo affec	uld not t imple	affect in mentatio	npleme	entation	s beh the c	aving orred	g like indicate cted functiona	d in th lity ot	ne CR, wo herwise.	ould
Clauses affected:	ж	8.1.2	.2.2, 8.	<mark>4.2.2.2,</mark>	<mark>8.1.2.3</mark>	8 <mark>.2, 8.4</mark> .	<mark>2.3.2</mark> ,	<mark>, 9.1.</mark>	.1.3, New 8.1.	2.2.2	<mark>A, 8.4.2.2</mark>	<mark>.2A</mark>

Other specs# -Other core specifications

affected:



Test specifications O&M Specifications

Accompanying CR: TS25.123 CR143 in R4-020014 Other comments:

8 UE Measurements Procedures

8.1 Measurements in CELL_DCH State

8.1.1 Introduction

This section contains requirements on the UE regarding measurement reporting in CELL_DCH state. The requirements are split in TDD intra frequency, TDD inter frequency, FDD and GSM measurements. These measurements may be used by the UTRAN, e.g. for handover decisions. 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.

8.1.2 Requirements

8.1.2.1 UE Measurement Capability

The UE shall be able to monitor up to:

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

Performance requirements for different types of measurements and different number of cells are defined in the following sections.

The requirements in section 9 are applicable for a UE performing measurements according to this section.

8.1.2.2 TDD intra frequency measurements

During the CELL_DCH state the UE shall continuously measure detected intra frequency cells and search for new intra frequency cells in the monitoring set. In case the network requests the UE to report unlisted cells, the UE shall also search for intra frequency cells outside the monitored set. Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not allocated to transmission nor the time used for inter frequency measurements.

8.1.2.2.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify TDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

8.1.2.2.2 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 detected intra-frequency cells 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 detectable cells, that were not measured during that measurement period, shall be measured in the following measurement periods. The measurement accuracy for all measured cells shall be as specified in the section 9.

$$\mathbf{Y}_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement TDD}} \cdot \frac{\mathbf{T}_{\text{Intra}}}{\mathbf{T}_{\text{Measurement Period, Intra}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

 $X_{\text{basic measurement TDD}} = 6$ (cells)

 $T_{Measurement Period, Intra} = 200 \text{ ms.}$ The measurement period for Intra frequency P-CCPCH <u>RSCP</u> measurements.

 T_{Intra} : This is the minimum time (representing a time corresponding to an integer number of full slots) 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.

 $T_{\text{basic_identify}_{\text{TDD, intra}}} = 800 \text{ ms.}$ 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 8.1.2.6).

8.1.2.2.2A 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 10 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 capable of performing 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.

$$\underline{\qquad} Y_{\text{measurement intra ISCP}} = Floor \left\{ X_{\text{basic measurement ISCP}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra, ISCP}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

 $X_{\text{basic measurement ISCP}} = 10$ (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_{Intra}</u>: This is the minimum time (representing a time corresponding to an integer number of full slots) 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.

8.1.2.2.3 Periodic Reporting

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

8.1.2.2.4 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 8.1.2.2.5 Event Triggered Reporting.

8.1.2.2.5 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, measured without L3 filtering shall be less than T $_{identify intra}$ defined in Section 8.1.2.2.1. When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{identify intra}$ and then enters 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.

8.1.2.3 TDD inter frequency measurements

When signalled by the network during CELL_DCH state, the UE shall continuously measure detected inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

8.1.2.3.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify inter}} = Max \left\{ 5000, T_{\text{basic identify TDD,inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter}}} \cdot N_{Freq} \right\} ms$$

8.1.2.3.2 <u>P-CCPCH RSCP Mm</u>easurement period

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

$$T_{\text{measurement inter}} = Max \left\{ 480, T_{\text{basic measurement TDD inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter}}} \cdot N_{Freq} \right\} ms$$

In case of a dual receiver UE, the measurement period for inter frequency <u>P-CCPCH RSCP</u> measurements is 480 ms.

 $_{Measurement_Period Inter}$ =480 ms. The period used for calculating the measurement period T_{measurement_inter} for inter frequency P-CCPCH <u>RSCP</u> measurements.

 T_{Inter} . This is the minimum time (representing a time corresponding to an integer number of full slots) available for inter frequency measurements during the period $T_{Measurement_Period inter}$ with an arbitrarily chosen timing. The minimum time depends on the channel allocation and is calculated by assuming 2*0.5 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 8.1.2.6).

 $T_{basic_measurement_TDD inter} = 50$ 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_{Freq}: <u>nu</u>mber of TDD frequencies indicated in the interfrequency measurement control information.

8.1.2.3.3 Periodic Reporting

Reported measurements in periodically triggered 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 8.1.2.3.4 Event Triggered Reporting.

8.1.2.3.4 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 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 8.1.2.3.1. When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{identify_inter}$ and then enters the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement_Period Inter}$ when the L3 filter has not been used.

8.4 Measurements in CELL_FACH State

8.4.1 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.

8.4.2 Requirements

8.4.2.1 UE Measurement Capability

The UE shall be able to monitor up to

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

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 idle intervals as described in TS 25.225 are used to find and measure on other 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 $N_{TDD} = 0$.

 $N_{FDD} = 0$ or 1. If the UE is capable of FDD and there are FDD cells in the neighbour list $N_{FDD} = 1$ otherwise $N_{FDD} = 0$.

 $N_{GSM} = 0$ 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_{TTI} is the number of frames in each measurement occasion, equal to the length of the largest TTI on the SCCPCH monitored by the UE.

8.4.2.2 TDD intra frequency measurements

During the CELL_FACH state the UE shall continuously measure detected intra frequency cells and search for new intra frequency cells in the monitoring set. In case the network requests the UE to report unlisted cells, the UE shall also search for intra frequency cells outside the monitored set. Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not allocated to transmission nor the time used for inter frequency measurements.

8.4.2.2.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify TDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

8.4.2.2.2 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 detected intra-frequency cells 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 detectable cells, that were not measured during that measurement period, shall be measured in the following measurement periods. The measurement accuracy for all measured cells shall be as specified in the section 9.

$$Y_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement TDD}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra}}} \right\}$$

whereby function Floor(x) takes the integer part of x.

 $X_{\text{basic measurement TDD}}$ is specified in section 8.1.2.2.2

T_{Measurement_Period, Intra} is specified in section 8.1.2.2.2

T_{Intra}: is specified in section 8.1.2.2.2

T_{basic_identify_TDD, intra} is specified in section 8.1.2.2.2

8.4.2.2.2A 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 10 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 capable of performing Timeslot ISCP measurements on the current serving for at least $Y_{\text{measurement intra ISCP}}$ arbitrary DL timeslots, where $Y_{\text{measurement intra ISCP}}$ 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.

$$\underline{\qquad} Y_{\text{measurement intra ISCP}} = Floor \left\{ X_{\text{basic measurement ISCP}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra, ISCP}}} \right\}$$

whereby function Floor(x) takes the integer part of x,

 $X_{\text{basic measurement ISCP}} = 10$ (arbitrary DL timeslots of the current serving cell)

T_{Measurement_Period, Intra, ISCP} is specified in section 8.1.2.2.2A,

 T_{Intra} is specified in section 8.1.2.2.2A.

8.4.2.2.3 Periodic Reporting

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

8.4.2.2.4 Event Triggered Reporting

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

In CELL_FACH event triggered reporting can only be set for Traffic Volume measurements defined in TS 25.331.

8.4.2.3 TDD inter frequency measurements

When signalled by the network during CELL_FACH state, the UE shall continuously measure detected inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

8.4.2.3.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$\mathbf{T}_{\text{identify inter}} = Max \left\{ 5000, \mathbf{T}_{\text{basic identify TDD, inter}} \cdot \frac{\mathbf{T}_{\text{Measurement Period, Inter}}}{\mathbf{T}_{\text{Inter FACH}}} \cdot N_{Freq} \right\} ms$$

8.4.2.3.2 <u>P-CCPCH RSCP Mm</u>easurement period

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

$$T_{\text{measurement inter}} = Max \left\{ 480, T_{\text{basic measurement TDD inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter FACH}}} \cdot N_{Freq} \right\} ms$$

T_{Measurement Period Inter} is specified in section 8.1.2.3.2

T _{Inter FACH:} This is the minimum time as full slots that is available for the inter frequency <u>P-CCPCH RSCP</u> measurements during the period $T_{Measurement_Period inter}$ 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*0.5 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.

T_{basic identify TDD,inter} is specified in section 8.1.2.3.2

 $T_{basic_measurement_TDD inter}$ is specified in section 8.1.2.3.2

N_{Freq} is specified in section 8.1.2.3.2

If the UE does not need measurement occasions to perform inter-frequency measurements, the measurement period for inter frequency measurements is 480ms.

8.4.2.3.3 Periodic Reporting

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

8.4.2.3.4 Event Triggered Reporting

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

In CELL_FACH event triggered reporting can only be set for Traffic Volume measurements defined in TS 25.331.

9.1.1.3 Timeslot ISCP

The measurement period for CELL_DCH state can be found in section 8. The measurement period for CELL_FACH state can be found in section 8.4.

9.1.1.3.1 Absolute accuracy requirements

Table 9.9 Timeslot_ISCP Intra frequency absolute accuracy

Paramotor	Unit	Accur	Conditions	
Farameter	Unit	Normal condition	Extreme condition	lo [dBm]
Timeslot_ISCP	dB	± 6	± 9	-9470
	dB	± 8	± 11	-9450

9.1.1.3.2 Range/mapping

The reporting range for *Timeslot ISCP* is from -115...-25 dBm.

In table 9.10 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Reported value	Measured quantity value	Unit
UE_TS_ISCP_LEV_00	Timeslot_ISCP <-115	dBm
UE_TS_ISCP_LEV_01	$-115 \leq \text{Timeslot}_\text{ISCP} < -114$	dBm
UE_TS_ISCP_LEV_02	-114 ≤ Timeslot_ISCP < -113	dBm
UE_TS_ISCP_LEV_89	-27 ≤ Timeslot_ISCP < -26	dBm
UE_TS_ISCP_LEV_90	-26 ≤ Timeslot_ISCP < -25	dBm
UE_TS_ISCP_LEV_91	-25 ≤ Timeslot_ISCP	dBm

Table 9.10

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6 Dynamic channel allocation

6.1 Introduction

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

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

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 14, but in worst case the UE shall be capable to measure 14 downlink timeslots. In case of "simple UE" [FFS] timeslots shall at least be measured.

6.4 Measurement reporting delay

In 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.

Void

A.6 Dynamic channel allocation

NOTE: This section is included for consistency with numbering with section 6; currently no test covering requirements in this section exists.

Void

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Reason for change: \$\$ Correction to lo conditions: At the RAN4, RAN2 and T1/RF joint meeting on RRM testing during WG4 was agreed that the lo conditions on the accuracy requirements of sor measurements need to be clarified to avoid more misunderstandings. changes have been approved already for 25.133 in R4-011637 in WG4#20 TrCH BER measurement period:							
Summary of change: ୨	 Io conditions are clarified for the accuracy requirements of P-CCPCH RSCP intra-frequency, UTRA Carrier RSSI inter-frequency and TS ISCP intra-frequency measurements. Instead of having two overlapping ranges for lo conditions –94 dBm70dBm and –94 dbm50 dBm, the new ranges are –94 dBm70 dBm and –70 dBm50 dBm. 						
	An obvious error for Io conditions for UTRA Carrier RSSI relative measurement is corrected from –94 dBm –70 dBm to –94 dBm –50 dBm. Also, TS ISCP and UTRA carrier RSSI measurement units are corrected from "dB" to "dBm".						
	TrCH BER measurement period set to TTI length of the Transport Channel.						
Consequences if a solution of approved:	Potential misunderstandings of UE measurement lo conditions and incomplete requirements.						
	Isolated impact analysis:						
	This CR is a correction to a function, where the specification is ambiguous or not sufficiently explicit.						
	It would not affect implementations behaving like indicated in the CR, would						

	affect implementations supporting the corrected functionality otherwise.					
Clauses affected:	# 9.1.1.1.1, 9.1.1.3.1, 9.1.1.4.1, 9.2.1.5					
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9.1.1 Performance for UE measurements in downlink (RX)

9.1.1.1 P-CCPCH RSCP (TDD)

These measurements consider *P-CCPCH RSCP* measurements for TDD cells.

The measurement period for CELL_DCH state can be found in section 8.

The accuracy requirements in table 9.1 are valid under the following conditions:

P-CCPCH RSCP \geq -102 dBm.

The received signal levels on SCH and P-CCPCH are according the requirements in paragraph 8.1.2.6

9.1.1.1.1 Absolute accuracy requirements

Table 9.1 P-CCPCH_RSCP absolute accuracy

Paramotor	Unit	Accura	Conditions	
Farameter	Unit	Normal condition	Extreme condition	lo [dBm]
	dBm	± 6	± 9	-9470
	dBm	± 8	± 11	- <mark>94<u>70</u>50</mark>

9.1.1.1.2 Relative accuracy requirements

The P-CCPCH_RSCP intra-frequency relative accuracy is defined as the P-CCPCH_RSCP measured from one cell compared to the P-CCPCH_RSCP measured from another cell on the same frequency.

The accuracy requirements in table 9.2 are valid under the following conditions:

P-CCPCH RSCP1,2 \geq -102 dBm.

.

$$\left| \mathbf{P} - \mathbf{CCPCH} \, \mathbf{RSCP1} \right|_{in \, dB} - \mathbf{P} - \mathbf{CCPCH} \, \mathbf{RSCP2} \right|_{in \, dB} \le 20 \, dB$$

Relative Io difference $[dB] \leq relative RSCP$ difference [dB]

The received signal levels on SCH and P-CCPCH are according the requirements in paragraph 8.1.2.6

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

.

Parameter		Accurac	Conditions		
	Unit	Normal condition	Extreme condition	lo [dBm]	relative RSCP difference [dbB]
		±1	±1		<2
P-CCPCH_RSCP	dBm	±2	±2	-9450	214
		±3	± 3		>14

The P-CCPCH_RSCP inter-frequency relative accuracy is defined as the P-CCPCH_RSCP measured from one cell compared to the P-CCPCH_RSCP measured from another cell on a different frequency.

The accuracy requirements in table 9.3 are valid under the following conditions:

P-CCPCH RSCP1,2 \geq -102 dBm.

$\left| \mathbf{P} - \mathbf{CCPCH} \, \mathbf{RSCP1} \right|_{in \, dB} - \mathbf{P} - \mathbf{CCPCH} \, \mathbf{RSCP2} \right|_{in \, dB} \le 20 dB$

The received signal levels on SCH and P-CCPCH are according the requirements in paragraph 8.1.2.6

Table 9.3 P-CCPCH_RSCP inter-frequency relative accuracy

Parameter	Unit	Accura	Conditions	
Falameter	Unit	Normal condition	Extreme condition	lo [dBm]
P-CCPCH_RSCP	dBm	± 6	± 6	-9450

9.1.1.1.3 Range/mapping

The reporting range for *P-CCPCH RSCP* is from -115 ...-25 dBm.

In table 9.4 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9.4

Reported value	Measured quantity value	Unit
P-CCPCH RSCP_LEV _00	P-CCPCH RSCP <-115	dBm
P-CCPCH RSCP_LEV _01	-115 ≤ P-CCPCH RSCP < -114	dBm
P-CCPCH RSCP_LEV _02	-114 ≤ P-CCPCH RSCP < -113	dBm
P-CCPCH RSCP_LEV _89	-27 ≤ P-CCPCH RSCP < -26	dBm
P-CCPCH RSCP_LEV _90	-26 ≤ P-CCPCH RSCP < -25	dBm
P-CCPCH RSCP_LEV _91	-25 ≤ P-CCPCH RSCP	dBm

9.1.1.3 Timeslot ISCP

The measurement period for CELL_DCH state can be found in section 8.

9.1.1.3.1 Absolute accuracy requirements

Table 9.9 Timeslot_ISCP Intra frequency absolute accuracy

Paramatar	Unit	Accur	Conditions	
Farameter	Unit	Normal condition	Extreme condition	lo [dBm]
Timeslet ISCD	dB <u>m</u>	± 6	± 9	-9470
Timesiot_ISCP	dB <u>m</u>	± 8	± 11	- <mark>94<u>70</u>50</mark>

9.1.1.3.2 Range/mapping

The reporting range for *Timeslot ISCP* is from -115...-25 dBm.

In table 9.10 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Reported value	Measured quantity value	Unit
UE_TS_ISCP_LEV_00	Timeslot_ISCP <-115	dBm
UE_TS_ISCP_LEV_01	-115 ≤ Timeslot_ISCP < -114	dBm
UE_TS_ISCP_LEV_02	-114 ≤ Timeslot_ISCP < -113	dBm
UE_TS_ISCP_LEV_89	-27 ≤ Timeslot_ISCP < -26	dBm
UE_TS_ISCP_LEV_90	-26 ≤ Timeslot_ISCP < -25	dBm
UE_TS_ISCP_LEV_91	-25 ≤ Timeslot_ISCP	dBm

Table 9.10

9.1.1.4 UTRA carrier RSSI

Note: The purpose of measurement is for Inter-frequency handover evaluation.

The measurement period for CELL_DCH state can be found in section 8.

9.1.1.4.1 Absolute accuracy requirement

Absolute accuracy case only one carrier is applied.

Table 9.11 UTRA carrier RSSI Inter frequency absolute accuracy

Parameter	Unit	Accura	Conditions	
Farailleter		Normal condition	Extreme condition	lo [dBm]
UTRA Carrier RSSI	dB <u>m</u>	± 4	± 7	-9470
	dB <u>m</u>	±6	± 9	- <mark>94<u>70</u>50</mark>

9.1.1.4.2 Relative accuracy requirement

Relative accuracy requirement is defined as active cell frequency UTRAN RSSI compared to measured other frequency UTRAN RSSI level

The accuracy requirements in table 9.12 are valid under the following condition:

| Channel 1_Io -Channel 2_Io | < 20 dB.

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Table 9 12 UTRA carrie	r RSSI Inter	frequency	/ relative	accuracy
		noquonoj	1014110	accuracy

Parameter	Unit	Accura	Conditions	
		Normal condition	Extreme condition	lo [dBm]
UTRA Carrier RSSI	dB <u>m</u>	± 7	± 11	-94 <mark>70</mark> 50

9.1.1.4.3 Range/mapping

The reporting range for UTRA carrier RSSI is from -100 ...-25 dBm.

In table 9.13 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Reported value	Measured quantity value	Unit
UTRA_carrier_RSSI_LEV _00	UTRA carrier RSSI < -100	dBm
UTRA_carrier_RSSI_LEV _01	-100 ≤ UTRA carrier RSSI < –99	dBm
UTRA_carrier_RSSI_LEV _02	-99 ≤ UTRA carrier RSSI < -98	dBm
UTRA_carrier_RSSI_LEV _74	-27 ≤ UTRA carrier RSSI < -26	dBm
UTRA_carrier_RSSI_LEV _75	-26 ≤ UTRA carrier RSSI < -25	dBm
UTRA_carrier_RSSI_LEV _76	-25 ≤ UTRA carrier RSSI	dBm

Table 9.13

<next changed section>

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9.2.1.5 Transport Channel BER

The measurement period shall be equal to the [TTI] of the transport channel. Each reported Transport channel BER measurement shall be an estimate of the BER averaged over one measurement period only.

9.2.1.5.1 Accuracy requirement

The average of consecutive Transport channel BER measurements is required to fulfil the accuracy stated in table 9.39 if the total number of erroneous bits during these measurements is at least 500 and the absolute BER value for each of the measurements is within the range given in table9.39.

Parameter	Unit	Accuracy [% of the absolute BER value]	Conditions	
			Range	
TrpBER	-	+/- 10	Convolutional coding $1/3^{rd}$ with any amount of repetition or a maximum of 25% puncturing: for absolute BER value $\leq 15\%$ Convolutional coding $1/2$ with any amount of repetition or no puncturing: for absolute BER value $\leq 15\%$ Turbo coding $1/3^{rd}$ with any amount of repetition or a maximum of 20% puncturing: for absolute BER value $\leq 15\%$.	

Table 9.39 Transport channel BER accuracy

9.2.1.5.2 Range/mapping

The *Transport channel BER* reporting range is from 0 to 1.

In table 9.40 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9.40

Reported value	Measured quantity value	Unit
TrCh_BER_LOG_000	Transport channel BER = 0	-
TrCh_BER_LOG_001	-∞ < Log10(Transport channel BER) < -2,06375	-
TrCh_BER_LOG_002	-2,06375≤ Log10(Transport channel BER) < -2,055625	-
TrCh_BER_LOG_003	-2,055625 ≤ Log10(Transport channel BER) < -2,0475	-
TrCh_BER_LOG_253	-0,024375 ≤ Log10(Transport channel BER) < -0,01625	-
TrCh_BER_LOG_254	-0,01625 ≤ Log10(Transport channel BER) < -0,008125	-
TrCh_BER_LOG_255	$-0,008125 \le Log10$ (Transport channel BER) ≤ 0	-