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

Source TSG RAN WG4

Agenda item: 8.4.3

RAN4 Spec CR		CR	Title	Cat	Phase	Curr	New
Tdoc	-1					Ver	Ver
R4-010873	25.123	88	Section 4 corrections and clarifications in the test cases	F	Rel99	3.6.0	3.7.0
R4-011059	25.123	89	Section 4 corrections and clarifications in the test cases	Α	Rel-4	4.1.0	4.2.0
R4-010875	25.123	90	General section 5 corrections	F	Rel99	3.6.0	3.7.0
R4-011060	25.123	91	General section 5 corrections	Α	Rel-4	4.1.0	4.2.0
R4-010877	25.123	92	Introduction of intra- and inter-frequency test cases for Cell-PCH and URA-PCH	F	Rel99	3.6.0	3.7.0
R4-011061	25.123	93	Introduction of intra- and inter-frequency test cases for Cell-PCH and URA-PCH	Α	Rel-4	4.1.0	4.2.0
R4-011093	25.123	94	Transport Channel BER accuracy requirement	F	Rel99	3.6.0	3.7.0
R4-011095	25.123	95	Transport Channel BER accuracy requirement	Α	Rel-4	4.1.0	4.2.0
R4-011097	25.123	96	Success Rates in Test Cases	F	Rel99	3.6.0	3.7.0
R4-011098	25.123	97	Success Rates in Test Cases	Α	Rel-4	4.1.0	4.2.0
R4-011105	25.123	98	Introduction of RRC Connection re-establishment requirements	F	Rel99	3.6.0	3.7.0
R4-011062	25.123	99	Introduction of RRC Connection re-establishment requirements	Α	Rel-4	4.1.0	4.2.0
R4-011106	25.123	100	Introduction of RRC Connection re-establishment test cases	F	Rel99	3.6.0	3.7.0
R4-011063	25.123	101	Introduction of RRC Connection re-establishment test cases	Α	Rel-4	4.1.0	4.2.0
R4-011180	25.123	102	Correction of UE CPICH RSCP reporting range	F	Rel99	3.6.0	3.7.0
R4-011254	25.123	103	Correction of UE CPICH RSCP reporting range	Α	Rel-4	4.1.0	4.2.0
R4-011252	25.123	104	Clarification to requirement classification for statistical testing	F	Rel99	3.6.0	3.7.0
R4-011320	25.123	105	Clarification to requirement classification for statistical testing	Α	Rel-4	4.1.0	4.2.0
R4-011253	25.123	106	Corrections to sections on inter-frequency measurements in Idle Mode and UE measurement capabilities in Cell-DCH and Cell-FACH for UTRA TDD	F	Rel99	3.6.0	3.7.0
R4-011344	25.123	107	Corrections to sections on inter-frequency measurements in Idle Mode and UE measurement capabilities in Cell-DCH and Cell-FACH for UTRA TDD	А	Rel-4	4.1.0	4.2.0
R4-011175	25.123	108	Correction to event 1G triggered measurement reporting delay requirement for UTRA TDD intra-frequency measurement test in A.8.1.1	F	Rel99	3.6.0	3.7.0

Edinburgh, Great Britain, 3rd - 7th September 2001

			CHAN	IGE R	EQ	UEST	F			CR-Form-v4
¥	25.1	<mark>23</mark> CR	100	ж	ev	- *	Current ver	sion:	3.6.0	ж
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 A	ccess Netwo	rk X	Core Ne	etwork
Title: ж		luction of	RRC Con	nection re	-estat	olishmer	t test cases			
Source: ೫	RAN	WG4								
Work item code: ℜ	B						Date: ೫	<mark>2001</mark> 8	1-09-03	
Category: ₩	Use <u>on</u> F A B C D Detaile	(correction (correspon (addition of (functiona (editorial r d explanati	nds to a co of feature), I modification modification	rrection in a on of featur 1) above cate	re)		Release: # Use <u>one</u> o 2 se) R96 R97 R98 R99 REL-4 REL-5	f the foll (GSM (Relea (Relea (Relea	owing rele Phase 2) (se 1996) (se 1997) (se 1998) (se 1999) (se 4)	ases:
Reason for change			ases for R TS25.123		ection	re-estat	blishment req	uiremer	nt are cu	rrently
Summary of chang				w section / establishn			g the corresp ent	onding	test case	es for the
Consequences if not approved:	ж I	Missing te	est cases,	inconsiste	ncy b	etween	25.133 and 2	5.123.		
Clauses affected:	ж ,	A6A								
Other specs affected:	ж Х	Test sp	ore specif ecification pecificatio	IS	Ħ	34.122	2			
Other comments:	ж									

How to create CRs using this form:

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

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

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

Parameter	<u>Unit</u>	<u>Value</u>	Comment
Power Control		<u>On</u>	
Active cell		Cell 1	
<u>N313</u>	Frames	20	
<u>N315</u>	Frames	<u>20</u>	
<u>T313</u>	Second	<u>0</u>	
	<u>S</u>		
<u><u>T</u>si</u>	<u>ms</u>	<u>1280</u>	
Monitored cell list size		<u>24</u>	Monitored set shall only include intra frequency neighbours
Cell 2		included in monitored set	Cell parameters according table A6.2.
Reporting frequency	Second	4	
	<u>S</u>		
<u><u> </u></u>		<u>10</u>	
<u>T2</u>		<u>6</u>	

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

Parameter Parameter	<u>Unit</u>	<u>Cell 1</u>			Cell 2				
Timeslot Number		()	~	3	()	8	<u>3</u>
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
UTRA RF Channel Number			<u>Char</u>	<u>inel 1</u>			<u>Char</u>	<u>nel 1</u>	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>		
SCH_Ec/lor	<u>dB</u>	-9	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>
<u>SCH_t_{offset}</u>		<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>15</u>	<u>15</u>	<u>15</u>	<u>15</u>
PICH_Ec/lor				-3	<u>-3</u>			<u>-3</u>	<u>-3</u>
<u>OCNS</u>		<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	-4,28	<u>-4,28</u>	<u>-4,28</u>	-4,28	-4,28
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>3</u>	<u>-13</u>	<u>3</u>	<u>-13</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>
I _{oc}	<u>dBm/3.</u> <u>84 MHz</u>	<u>-70</u>							
PCCPCH_RSCP	<u>dB</u>	<u>-70</u>	<u>-86</u>			<u>-68</u>	<u>-68</u>		
Propagation Condition		AWGN							

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.6.3 General tes	t parameters for RRC	connection re-establish	<u>nment delay, Test 2</u>

Parameter	<u>Unit</u>	Value	Comment
DCH Parameters		DL Reference measurement channel 12.2 kbps	Located in an other TS than 0 or 8
Power Control		<u>On</u>	
Active cell		<u>Cell 1</u>	
<u>N313</u>	Frames	<u>20</u>	
<u>N315</u>	Frames	<u>20</u>	
<u>T313</u>	Seconds	<u>0</u>	
<u>T_{SI}</u>	<u>ms</u>	<u>1280</u>	
Cells in the monitored set		<u>24</u>	
Channels in the monitored set		<u>Channel 1, Channel 2, Channel 3</u>	
Cell 2		Located on channel 2, cell 2 not included in monitored set	Parameters according table A6.4
Reporting frequency	Seconds	<u>4</u>	
<u><u>T1</u></u>		<u>10</u>	
<u>T2</u>		<u>6</u>	

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

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

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:

<u>N313</u> 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:

<u>T</u> _{search}	is the time it takes for the UE to search the cell. $T_{search} = 100 \text{ ms}$ in case of a known
	target cell.
T	Man the second states and a construction to Construct to Construct to 11, 11, 11, 11, 11, 11, 11, 11, 11, 11

 $\frac{T_{SI}}{T_{SI}} = \frac{Maximum repetition rate of relevant system information blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.}$

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:

N313is 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.

<u>The RRC connection re-establishment delay can be expressed as: $50ms+T_{search}*NF+T_{SL}$ where:</u>

- $\frac{T_{search}}{target cell.}$ 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
- <u>T_{SI}</u><u>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.</u>

This gives a total of 3.93s in the test case.

Edinburgh, Great Britain, 3rd - 7th September 2001

CHANGE REQUEST										
ж	25.123 CR 101 [#] ev - [#] Current version: 4.1.0 [#]									
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the # symbols.										
Proposed change affects: # (U)SIM ME/UE X Radio Access Network X Core Network										
Title: ೫	Introduction of RRC Connection re-establishment test cases									
Source: ೫	RAN WG4									
Work item code: #	Date: 米 2001-09-03									
[ARelease: %Rel-4Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99Cetailed explanations of the above categories canREL-4C (Release 4)REL-5C (Release 5)									
Reason for change:	Corresponding REL-4 CR to document R4-01 <u>11060881</u> . The test cases for RRC connection re-establishment requirement are currently missing in TS25.123.									
Summary of change	RRC link re-establishment requirement									
Consequences if not approved:	Inconsistency between releases. Missing test cases, inconsistency between 25.133 and 25.123.									
Clauses affected:	육 A6A									
Other specs affected:	X Other core specifications % X Test specifications 34.122 O&M Specifications 34.122									
Other comments:	¥									

How to create CRs using this form:

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

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

Parameter	Unit	Value	Comment
Power Control		On	
Active cell		Cell 1	
<u>N313</u>	Frames	<u>20</u>	
<u>N315</u>	Frames	<u>20</u>	
<u>T313</u>	Second	<u>0</u>	
	<u>S</u>		
<u>T</u> si	<u>ms</u>	<u>1280</u>	
<u>Monitored cell list size</u>		<u>24</u>	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	<u>Second</u> <u>s</u>	<u>4</u>	
<u>T1</u>		<u>10</u>	
<u>T2</u>		<u>6</u>	

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

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

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.6.3 General test parameters for RRC connection re-establishment delay, Test 2

			1			
Parameter	<u>Unit</u>	<u>Value</u>	<u>Comment</u>			
DCH Parameters		DL Reference measurement	Located in an other TS than 0 or 8			
		channel 12.2 kbps				
Power Control		<u>On</u>				
Active cell		<u>Cell 1</u>				
<u>N313</u>	Frames	<u>20</u>				
<u>N315</u>	Frames	<u>20</u>				
<u>T313</u>	Seconds	<u>0</u>				
<u>T_si</u>	<u>ms</u>	<u>1280</u>				
Cells in the monitored set		<u>24</u>	P-CCPCH RSCP of all cells in the monitored set below –86dBm			
Channels in the monitored set		Channel 1, Channel 2, Channel 3				
<u>Cell 2</u>		Located on channel 2, cell 2 not included in monitored set	Parameters according table A6.4			
Reporting frequency	Seconds	4				
<u>T1</u>		<u>10</u>				
<u>T2</u>		<u>6</u>				

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

Parameter	<u>Unit</u>		<u>Ce</u>	<u> 1</u>			<u>Ce</u>	<u>II 2</u>			
Timeslot Number		(<u>0</u>		3	<u>0</u>		8	<u>3</u>		
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>		
UTRA RF Channel Number			<u>Char</u>	<u>nel 1</u>		<u>Channel 2</u>					
PCCPCH_Ec/lor	<u>dB</u>	-3	<u>-3</u>			-3	-3				
SCH_Ec/lor	<u>dB</u>	-9	-9	<u>-9</u>	<u>-9</u>	-9	<u>-9</u>	<u>-9</u>	<u>-9</u>		
<u>SCH_t_{offset}</u>		<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>15</u>	<u>15</u>	<u>15</u>	<u>15</u>		
PICH_Ec/lor				<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>		
<u>OCNS</u>		<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>		
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>3</u>	<u>-13</u>	<u>3</u>	<u>-13</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>		
I _{oc}	<u>dBm/3.</u> <u>84 MHz</u>				<u>-7</u>	<u>70</u>					
PCCPCH_RSCP	<u>dB</u>	-70	<u>-86</u>			-68	-68				
Propagation Condition					AW	/ <u>GN</u>					

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 for 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.
<u>The RRC connection re- establishment delay can be expressed as: $50ms+T_{search} + T_{SI}$ where:</u>
$\frac{T_{search}}{target cell.}$ is the time it takes for the UE to search the cell. $T_{search} = 100 \text{ ms}$ 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.
<u>A.6A.1.2.1.2 Test 2</u>
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.
<u>The RRC connection</u> re-establishment delay can be expressed as: $50ms+T_{search}*NF+T_{SL}$ where:
$\frac{T_{search}}{target cell.}$ is the time it takes for the UE to search the cell. $T_{search} = 800 \text{ ms in case of an unknown}$
<i>NF</i> 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.

R4-011180

Edinburgh, Great Britain, 3rd - 7th September 2001

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	CHANGE REQUEST
æ	25.123 CR 102 # ev _ # Current version: 3.6.0 #
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Proposed change	e affects: 第 (U)SIM ME/UE 🗙 Radio Access Network Core Network
Title:	Correction of UE CPICH RSCP reporting range
Source:	RAN WG4
Work item code:	
Category:	F Release: % Rel99 Use one of the following categories: Use one of the following releases: 2 F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can be found in 3GPP TR 21.900. REL-5 (Release 5)
Reason for chang	ge: # Incorrect reporting range lower limit of CPICH RSCP measurement is 115 dBm instead of -115dBm
Summary of chai	nge: # Change 115 dBm to -115dBm
Consequences if not approved:	Hard Street measurement reporting and inconsistency.
Clauses affected	: ^ቌ 9.1.1.2.1.2
Other specs affected:	 Conter core specifications Test specifications O&M Specifications
Other comments	· £

Other comments: 🛛 🕱 📴

9.1.1.2.1.2 Range/mapping

The reporting range for CPICH RSCP is from _115 ...-25 dBm.

In table 9.6 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9	.6
---------	----

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

R4-011254

Edinburgh, Great Britain, 3rd - 7th September 2001

	CR-Form
	CHANGE REQUEST
ж	25.123 CR 103 [#] ev _ [#] Current version: 4.1.0 [#]
For <u>HELP</u> on	using this form, see bottom of this page or look at the pop-up text over the $#$ symbols.
Proposed change	affects: 第 (U)SIM ME/UE X Radio Access Network Core Network
Title: ೫	Correction of UE CPICH RSCP reporting range
Source: ೫	RAN WG4
Work item code:೫	Date: 米 04/09/2001
Category: भ	A Release: % Rel-4 Use one of the following categories: <i>Lise one of the following releases: F</i> (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can be found in 3GPP TR 21.900. REL-5 (Release 5)
Reason for chang	e: # Incorrect reporting range lower limit of CPICH RSCP measurement is 115 dBm instead of -115dBm
Summary of chan	ge: ፡፡ Change 115 dBm to -115dBm
Consequences if not approved:	# Incorrect measurement reporting and inconsistency.
Clauses affected:	¥ 9.1.1.2.1.2
Other specs affected:	 Cher core specifications Test specifications O&M Specifications

Other comments: ೫ -

9.1.1.2.1.2 Range/mapping

The reporting range for CPICH RSCP is from _115 ...-25 dBm.

In table 9.6 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9	9.6
---------	-----

Reported value	Measured quantity value	Unit
CPICH_RSCP_LEV _00	CPICH RSCP <-115	dBm
CPICH_RSCP_LEV _01	-115 ≤ CPICH RSCP < -114	dBm
CPICH_RSCP_LEV _02	-114 ≤ CPICH RSCP < -113	dBm
CPICH_RSCP_LEV _89	-27 ≤ CPICH RSCP < -26	dBm
CPICH_RSCP_LEV _90	-26 ≤ CPICH RSCP < -25	dBm
CPICH_RSCP_LEV _91	$-25 \le CPICH RSCP$	dBm

R4-011252

Edinburgh, Great Britain, 3rd - 7th September 2001

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Proposed change	affect	ts: #	(U)\$	SIM	ME/	UE)	K	Radi	o Ac	cess	Networ	k X	Core	Netwo	ork
Title: ೫	Cla	rificatio	on to re	equireme	ent cla	ssifica	ation	for s	statis	tical t	testing				
Source: ೫	RA	N WG4	4												
Work item code: ೫										Ĺ	Date:	200	<mark>1-09-0</mark>	3	
Category: Ж	Use <u>d</u>	F (corr A (corr B (add C (fund D (edit led exp	ection) respond lition of ctional r orial mo planatio	owing cate ds to a co feature), modification odification ns of the TR 21.900	orrectior ion of fe n) above	n in an eature,)		lease	Us(e)	e <u>one</u> of 2 R96 R97 R98 R99 REL-4 REL-5	the fol (GSM (Relea (Relea (Relea	lowing I Phase ase 199 ase 199 ase 199 ase 199 ase 199	2) 16) 17) 18)	əs:
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Other specs affected:	¥ .	Τe	est spe	re speci cificatior ecificatio	าร	าร	ж								
Other comments:	ж														

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

A.2 Requirement classification for statistical testing

Requirements in this specification are either expressed as absolute requirements with a single value stating the requirement, or expressed as a success rate. There are no provisions for the statistical variations that will occur when the parameter is tested.

Annex A outlines the test in more detail and lists the test parameters needed. The test will result in an outcome of a test variable value for the DUT inside or outside the test limit. Overall, the probability of a "good" DUT being inside the test limit(s) and the probability of a "bad" DUT being outside the test limit(s) should be as high as possible. For this reason, when selecting the test variable and the test limit(s), the statistical nature of the test is accounted for.

The statistical nature depends on the type of requirement. Some have large statistical variations, while others are not statistical in nature at all. When testing a parameter with a statistical nature, a confidence level is set. This establishes the probability that a DUT passing the test actually meets the requirement and determines how many times a test has to be repeated and what the pass and fail criteria are. Those aspects are not covered by TS 25.123. The details of the tests, how many times to run it and how to establish confidence in the tests are described in TS 34.122. This Annex establishes what the test variable is and whether it can be viewed as statistical in nature or not.

A.2.1 Types of requirements in TS 25.123

A.2.1.1 Time and delay requirements on UE higher layer actions

One part of the RRM requirements are delay requirements:

- •____In idle mode (A.4) there is cell selection delay and cell re-selection delay.
- In UTRAN Connected Mode Mobility (A.5) there is measurement reporting delay, handover delay and cell re-selection delay.
- In RRC Connection Control (A.6) there is RRC re-establishment delay.

All have in common that the UE is required to perform an action observable in higher layers (e.g. camp on the correct cell) within a certain time after a specific event (e.g. a new strong pilot arises). The delay time is statistical in nature for several reasons, among others that measurements required by the UE are performed in a fading radio environment.

The variations make a strict limit unsuitable for a test. Instead there is a condition set for a correct action by the UE, e.g. that the UE shall camp on the correct cell within X seconds. Then the rate of correct events <u>ais</u> observed during repeated tests <u>shall be at least 90% in case of AWGN propagation condition</u>. and a limit is set on the rate of correct events, usually 90% correct events are required. How the limit is applied in the test depends on the confidence required, further detailed are in TS 34.122.

A.2.1.2 Measurements of power levels, relative powers and time

A very large number of requirements are on measurements that the UE performs: In UTRAN Connected Mode Mobility (A.5) there are measurement reports.

Measurement performance requirements (A.8) has requirements on all type of measurements.

The accuracy requirements on measurements are expressed in this specification as a fixed limit (e.g. +/-X dB), but the measurement error will have a distribution that is not easily confined in fixed limits. Assuming a Gaussian distribution of the error, the limits will have to be set at +/-3,29 σ if the probability of failing a "good DUT" in a single test is to be kept at 0,1%. It is more reasonable to set the limit tighter and test the DUT by counting the rate of measurements that are within he limits, in a way similar to the requirements on delay.

A.2.1.3 Implementation requirements

A few requirements are strict actions the UE should take or capabilities the UE should have, without any allowance for deviations. These requirements are absolute and should be tested as such. Examples are

"Event triggered report rate" in UTRAN Connected Mode Mobility (A.5)

R4-011320

Edinburgh, Great Britain, 3rd - 7th September 2001

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Proposed change	affects:	¥ (U)SIM	ME/UE	X Radio	Access Networ	k X Core Network
Title: ೫	Clarific	cation to requ	irement classi	fication for st	atistical testing	
Source: #	RAN V	VG4				
Work item code: भ					<i>Date:</i>	2001-09-03
Category: ₩	<i>F</i> (<i>A</i> (<i>B</i> (<i>C</i> (<i>D</i> (Detailed	addition of feat functional mod ditorial modifie	a correction in a ure), ification of featu cation) f the above cate	re)	2	Rel-4 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)
Reason for change	e: sł	stablishment a nall apply thus	are added in T	S25.123 also	test has to be	onnection re- the success rate of 90% added in the appropriate
Summary of chang			section A6 cor nto the require		ests for RRC co cation.	nnection re-
Consequences if not approved:	ж M	lisinterpretatio	on of test.			
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Other comments:	ж <u>С</u>	R needs not t	o be implemer	nted in case t	hat R4-010xxx	is approved, because it

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is a part of it.

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A.2.1 Types of requirements in TS 25.123

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The variations make a strict limit unsuitable for a test. Instead there is a condition set for a correct action by the UE, e.g. that the UE shall camp on the correct cell within X seconds. Then the rate of correct events <u>ais</u> observed during repeated tests <u>shall be at least 90% in case of AWGN propagation condition</u>. and a limit is set on the rate of correct events, usually 90% correct events are required. How the limit is applied in the test depends on the confidence required, further detailed are in TS 34.122.

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A.2.1.3 Implementation requirements

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R4-011253

Edinburgh, Great Britain, 3rd - 7th September 2001

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	CHANGE REQUEST
^ж 2	5.123 CR 106 [#] ev _ [#] Current version: 3.6.0 [#]
For <u>HELP</u> on usin	g this form, see bottom of this page or look at the pop-up text over the $#$ symbols.
Proposed change affe	ects: ೫ (U)SIM ME/UE X Radio Access Network X Core Network
	orrections to sections on inter-frequency measurements in Idle Mode and UE neasurement capabilities in Cell-DCH and Cell-FACH for UTRA TDD
Source: भ ह	AN WG4
Work item code: %	Date: 発 <mark>04/09/2001</mark>
De	Release: % Rel99e 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)R99Lateled explanations of the above categories canREL-4Found in 3GPP TR 21.900.REL-5
Reason for change:	[#] Un-specified parameter NFDD _{carrier} in section 4.2.2.4
	Current UE measurement capabilities in Cell-DCH and Cell-FACH with respect to the up to 32 intra-frequency measurement objects do not state explicitly that the serving cell is included.
Summary of change:	Serving cell explicitly included into set of up to 32 intra-frequency measurement objects in sections 8.1.2.1 and 8.4.2.1.
	Number of FDD carriers renamed from NFDD _{carrier} to N _{carrierFDD} and clarifications in section 4.
Consequences if not approved:	# UTRA TDD specifications unclear as to whether the serving cell is included or not into the set of 32 intra-frequency cells to be monitored in Cell-DCH and Cell-FACH.
Clauses affected:	^発 4.2.2.3, 4.2.2.4, 4.2.2.8, 8.1.2.1 and 8.4.2.1.
Other specs affected:	 Other core specifications # Test specifications O&M Specifications
Other comments:	₩ -

4.2.2.3 Measurement of inter-frequency TDD cells

The UE shall measure PCCPCH RSCP at least every $(N_{carrier}-1) * T_{measureTDD}$ (see table 4.1) for inter-frequency cells that are detected and measured according to the measurement rules. The parameter $N_{carrier}$ is the number of carriers used for TDD cells. The maximum number of carriers is 3 including the carrier the UE is camped on. The UE shall filter PCCPCH RSCP measurements of each measured inter-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$.

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already detected interfrequency cell has become better ranked than the serving cell within $(N_{carrier}-1) * T_{evaluateTDD}$ from the moment the interfrequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero. For non-detected inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that interfrequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero.

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

4.2.2.4 Measurement of inter-frequency FDD cells

The UE shall measure the signal level CPICH RSCP and CPICH Ec/Io of each FDD neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in TS25.304, at least every $T_{measureFDD}$ (see table 4.1). The UE shall filter CPICH RSCP measurements of each measured interfrequency cell using at least 2 measurements. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

CPICH RSCP is used as basic measurement quantity for cell ranking The filtering shall be such that the UE shall be capable of evaluating that an already detected inter-frequency cell has become better ranked than the serving cell within $\frac{NFDD_{earrier}}{N_{carrierFDD}}$ * T_{evaluateFDD} from the moment the inter-frequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. For non-detected inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. The parameter N_{carrierFDD} is the number of carriers used for FDD cells.

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

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

4.2.2.8 Numbers of cells in neighbouring cell lists

The UE shall be capable of monitoring 32 intra frequency TDD cells (including serving cell), 32 inter frequency cells (including TDD Mode cells and FDD Mode cells if FDD is supported by the UE). The TDD inter frequency cells can be located on two additional frequencies besides the serving cell and the inter frequency FDD cells can be located on up to 3 carriers. In addition the UE shall be able to monitor 32 GSM carriers if GSM is supported by the UE. UE measurement activity is controlled by measurement rules defined in TS25.304, allowing the UE to limit its measurement activity if certain conditions are fulfilled.

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

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

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

8 UE Measurements Procedures

21

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, the UE shall also in addition be able to support and process at least-32 inter RAT GSM cells.- distributed on up to 32 GSM carriers.

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.

8.4 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, the UE shall also in addition be able to support and process at least-32 inter RAT GSM cells. distributed on up to 32 GSM carriers.

The requirements in section 9 on P-CCPCH RSCP measurements are applicable for a UE performing measurements according to this section. For inter-frequency FDD, TDD and GSM cell re-selection, measurement occasions as specified in TS 25.331 and 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.

R4-011344

Edinburgh, Great Britain, 3rd - 7th September 2001

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æ	25.123 CR 107 [#] ev _ [#] Current version: 4.1.0 [#]
For <u>HELP</u> on u	sing this form, see bottom of this page or look at the pop-up text over the $#$ symbols.
Proposed change	affects: ೫ (U)SIM ME/UE X Radio Access Network X Core Network
Title: #	Corrections to sections on inter-frequency measurements in Idle Mode and UE measurement capabilities in Cell-DCH and Cell-FACH for UTRA TDD
Source: भ	RAN WG4
Work item code: ೫	Date: ೫ <mark>05/09/2001</mark>
Category: ₩	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)29(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	e: # Un-specified parameter NFDD _{carrier} in section 4.2.2.4 Current UE measurement capabilities in Cell-DCH and Cell-FACH with respect to the up to 32 intra-frequency measurement objects do not state explicitly that the serving cell is included.
Summary of chang	<i>ge:</i> % Serving cell explicitly included into set of up to 32 intra-frequency measurement objects in sections 8.1.2.1 and 8.4.2.1. Number of FDD carriers renamed from NFDD _{carrier} to N _{carrierFDD} and clarifications in section 4.
Consequences if not approved:	# UTRA TDD specifications unclear as to whether the serving cell is included or not into the set of 32 intra-frequency cells to be monitored in Cell-DCH and Cell- FACH.
Clauses affected:	# 4.2.2.3.1, 4.2.2.4.1, 4.2.2.8.1, 8.1.2.1.1 and 8.4.2.1.1
Other specs affected:	 Conter core specifications Test specifications O&M Specifications
Other comments:	¥ -

4.2.2.3 Measurement of inter-frequency TDD cells

4.2.2.3.1 3.84 Mcps option

The UE shall measure PCCPCH RSCP at least every $(N_{carrier}-1) * T_{measureTDD}$ (see table 4.1) for inter-frequency cells that are detected and measured according to the measurement rules. The parameter $N_{carrier}$ is the number of carriers used for TDD cells. The maximum number of carriers is 3 including the carrier the UE is camped on. The UE shall filter PCCPCH RSCP measurements of each measured inter-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$.

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already detected interfrequency cell has become better ranked than the serving cell within ($N_{carrier}$ -1) * $T_{evaluateTDD}$ from the moment the interfrequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero. For non-detected inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that interfrequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero.

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

4.2.2.4 Measurement of inter-frequency FDD cells

4.2.2.4.1 3.84 Mcps option

The UE shall measure the signal level CPICH RSCP and CPICH Ec/Io of each FDD neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in TS25.304, at least every $T_{measureFDD}$ (see table 4.1). The UE shall filter CPICH RSCP measurements of each measured interfrequency cell using at least 2 measurements. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

CPICH RSCP is used as basic measurement quantity for cell ranking, the filtering shall be such that the UE shall be capable of evaluating that an already detected inter-frequency cell has become better ranked than the serving cell within $\frac{NFDD_{earrier}}{N_{carrierFDD}}$ * T_{evaluateFDD} from the moment the inter-frequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. For non-detected inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 5 dB better than the serving cell within 30 s from the moment the inter-frequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. The parameter N_{carrierFDD} is the number of carriers used for FDD cells.

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

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

4.2.2.8 Numbers of cells in neighbouring cell lists

4.2.2.8.1 3.84 Mcps option

The UE shall be capable of monitoring 32 intra frequency TDD cells (including serving cell), 32 inter frequency cells (including TDD Mode cells and FDD Mode cells if FDD is supported by the UE). The TDD inter frequency cells can be located on two additional frequencies besides the serving cell and the inter frequency FDD cells can be located on up to 3 carriers. In addition the UE shall be able to monitor 32 GSM carriers if GSM is supported by the UE. UE measurement activity is controlled by measurement rules defined in TS25.304, allowing the UE to limit its measurement activity if certain conditions are fulfilled.

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

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

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

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, the UE shall also in addition be able to support and process at least-32 inter RAT GSM cells. distributed on up to 32 GSM carriers.

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.

8.4 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, the UE shall also in addition be able to support and process at least-32 inter RAT GSM cells. distributed on up to 32 GSM carriers.

The requirements in section 9 on P-CCPCH RSCP measurements are applicable for a UE performing measurements according to this section. For inter-frequency FDD, TDD and GSM cell re-selection, measurement occasions as specified in TS 25.331 and 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.

R4-011175

Edinburgh, Great Britain, 3rd - 7th September 2001

	CR-Form		
CHANGE REQUEST			
¥	25.123 CR 108 # ev _ # Current version: 3.6.0 #		
For HELP on using this form, see bottom of this page or look at the pop-up text over the \Re symbols.			
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network			
Title: 3	Correction to event 1G triggered measurement reporting delay requirement for UTR/ TDD intra-frequency measurement test in A.8.1.1		
Source: ೫	RAN WG4		
Work item code:♯	Date: 発 <mark>03/09/2001</mark>		
Category: *	Use one of the following categories:Use one of the following releases:F (correction)2(GSM Phase 2)A (corresponds to a correction in an earlier release)R96(Release 1996)B (addition of feature),R97(Release 1997)C (functional modification of feature)R98(Release 1998)D (editorial modification)R99(Release 1999)Detailed explanations of the above categories canREL-4(Release 4)be found in 3GPP TR 21.900.REL-5(Release 5)		
	 A.8.1.1.of 25.123 v3.5.0 at WG4#17. Unfortunately, the implementation of this change into 25.123 R'99 has been forgotten after approval in RAN#12 and therefore needs to be corrected (original contribution in R4-010475 - CR0081 and RP-010352). Note that the related R'4 implementation is correct. 		
Summary of chan	ge: # Event 1G reporting delay changed from [480] to 800 ms in A.8.1.1.2		
Consequences if not approved:	 Inconsistency 25.123 V3.6.0 and V4.1.0. Note that this is a previously approved change that has not correctly been implemented into 25.123 R'99. 		
Clauses affected:	<mark>፝ A.8.1.1.2</mark>		
Other specs affected:	 # Other core specifications Test specifications O&M Specifications 		
Other comments:	x		

A.8.1.1.2 Test Requirements

The UE shall send one Event 1G triggered measurement report, with a measurement reporting delay less than [480]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.

Edinburgh, Great Britain, 3rd - 7th September 2001

CHANGE REQUEST			
ж	25.123 CR 88 [#] ev _ [#] Current version: 3.6.0 [#]		
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the \Re symbols.			
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network			
Title: #	Section 4 corrections and clarifications in the test cases		
Source: ೫	RAN WG4		
Work item code: #	Date: ₩ 2001-05-21		
	FRelease: %Rel99Ise one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D (editorial modifications of the above categories canREL-4e found in 3GPP TR 21.900.REL-5		
Reason for change: Summary of change	in case UE does not find any suitable cell among the neighbour cells indicated in the measurement control system information. The time T1 before the multi- carrier test cases are started is enlarged to 30s. Comments on the mapping functions are removed because the mapping functions were removed in WG2 specifications. The used repetition period for the system information is currently only in the informative NOTE.		
Consequences if not approved:	X TBD value remaining in specification. Test cases are incorrect.		
Clauses affected: Other specs affected:	 # 4.2.2.1, A4 # Other core specifications # Test specifications O&M Specifications 		
Other comments:	 ۲		

How to create CRs using this form:

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

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

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

4.2.2 Requirements

4.2.2.1 Measurement and evaluation of cell selection criteria S_{rxlev} of serving cell

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

If the UE has evaluated in N_{serv} successive measurements that the serving cell does not fulfil the cell selection criterion S_{rxlex} , the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities. If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells

indicated in the measurement control system information for $\frac{12s[TBD] s}{s}$, the UE shall initiate cell selection procedures for the selected PLMN as defined in TS25.304.

NEXT changed section

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

l l	Parameter		Value	Comment	
Initial	Initial Active cell Cell1		Cell1		
condition	Neighbour cells		Cell2, Cell3, Cell4,		
			Cell5, Cell6		
Final	Active cell		Cell2		
condition					
HCS			Not used		
<u>UE TXF</u>	UE TXPWR MAX RACH		<u>21</u>	The value shall be used for all cells in the test.	
	Orxlevmin		<u>-102</u>	The value shall be used for all cells in the test.	
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.	
\underline{T}_{SI}		<u>s</u>	<u>1.28</u>	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		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			Chan	inel 1			Chan	nnel 1			Chan	nel 1	
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	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/Ior	dB		-	-3	-3	-		-3	-3		-	-3	-3
OCNS_Ec/Ior	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\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		
Qoffset <u>1_{s.n}</u>	<u>dB</u>	<u>C1, C2:</u> 0 <u>; C1, C3:0</u> ; C1,C4:0 <u>C1, C5:0</u> ; C1,C6:0			<u>C2, C1: 0; C2, C3:0; C2,C4:0</u> <u>C2, C5: 0; C2:C6:0</u>			<u>C3, C1: 0; C3, C2:0; C3,C4:0</u> <u>C3, C5: 0; C3:C6:0</u>					
Qhyst <u>1</u> s	<u>dB</u>	0 0			0				0				
Treselection	s		0			0				0			
Sintrasearch	dB	0 not sent not sent				not sent not sent				not sent not sent			
		Cell 4				Cell 5				Cell 6			
Timeslot		()	8	3	0 8			0 8		}		
		T1	T2	T1	T2	T 1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Chan	inel 1		Channel 1			Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	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/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS <u>Ec/Ior</u>	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\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		
Qoffset <u>1_{s,n}</u>	<u>dB</u>	<u>C4, C1: 0; C4, C2:0; C4,C3:0</u> <u>C4, C5:0; C4:C6:0</u>		<u>C5, C1: 0; C5, C2:0; C5,C3:0</u> <u>C5, C4:0; C5:C6:0</u>			<u>C6, C1: 0; C6, C2:0; C6,C3:0</u> <u>C6, C4:0; C6:C5:0</u>						
Qhyst <u>1</u> s	<u>dB</u>		())	_				0 0				
Treselection	8		())		0 0			0 0				
Sintrasearch	dB			sent sent				sent sent		not sent not sent			

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

I _{oc}	dBm/3, 84 MHz	-70
Propagation Condition		AWGN

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.

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.4.2.2 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: Genera	I 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			Cell2	
	HCS		Not used	
<u>UE_TX</u>	UE_TXPWR_MAX_RACH		<u>21</u>	The value shall be used for all cells in the test.
	Qrxlevmin		<u>-102</u>	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
<u>Tsı</u>		<u>S</u>	<u>1.28</u>	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	<u>30</u> 15	
	T2	S	15	

Parameter	Unit	Cell 1				Ce	11 2		Cell 3				
Timeslot Number		0 8			()	8	3	0 8		3		
		T1	T2	T1	Т2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1			Channel 2			Channel 1					
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	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/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	3	0	3	0	0	3	0	3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-70	-73			-73	-70			-76	-76		
Qoffset <u>1_{s.n}</u>	<u>dB</u>	-		<u>C3:0; C</u> ; C1:C6:			<u>C2, C1: 0; C2, C3:0; C2,C4:0</u> <u>C2, C5:0; C2:C6:0</u>			<u>C3, C1: 0; C3, C2:0; C3,C4:0</u> <u>C3, C5:0; C3:C6:0</u>			
Qhyst <u>1</u> s	<u>dB</u>	0 0			0								
Treselection	s	0 0				0 0				0			
Sintrasearch	dB	not sent not sent			not sent not sent					not	sent sent		
Sintersearch	<u>dB</u>		not			<u>not sent</u>						<u>sent</u>	
			Ce	11 4		Cell 5			Cell 6				
Timeslot		0)	8	8	0 8			0 8			3	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	Т2	T1	T2
UTRA RF Channel Number			Chan	nel 1		Channel 2			Channel 2				
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	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 <u>Ec/lor</u>	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\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		
Qoffset <u>1_{s,n}</u>	<u>dB</u>	<u>C4, C1: 0; C4, C2:0; C4, C3:0</u> C4, C5:0; C4:C6:0			<u>C5, C1: 0; C5, C2:0; C5,C3:0</u> <u>C5, C4:0; C5:C6:0</u>			<u>C6, C1: 0; C6, C2:0; C6,C3:0</u> <u>C6, C4:0; C6:C5:0</u>					
Qhyst <u>1_s</u>	<u>dB</u>)		0			0				
Treselection	S))))		0			
Sintrasearch	dB			sent sent				sent sent		not sent not sent			

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

Sintersearch	<u>dB</u>	<u>not sent</u>	<u>not sent</u>	<u>not sent</u>			
<i>I_{oc}</i> dBm/3, 84 MHz		-70					
Propagation Condition			AWGN				

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.

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.
т	Maximum repetition note of relevant system info blocks that people to be received by the III

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 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. 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 FDD cell 2 during T1, and the FDD cell 2 is better ranked (indicating a cell re selection according to section 4.2.2.4) than the TDD cell 1 during T2. 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	al Active cell		Cell1	TDD cell
condition	Neighbour cells		Cell2	FDD cell
Final condition	Active cell		Cell2	
	HCS		Not used	
UE T	UE TXPWR MAX RACH		<u>21</u>	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
<u><u>T</u>_{SI}</u>		<u>S</u>	<u>1.28</u>	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	<u>30</u> 15	During T1 cell 1 better ranked than cell 2
	T2	S	15	During T2 cell 2 better ranked than cell 1

Parameter	Unit	Cell 1				Cell 2		
Timeslot Number		(0	1	3	n.a	n.a.	
		T1	T2	T 1	T 2	T 1	Т 2	
UTRA RF Channel Number			Char	nnel 1		Chan	nel 2	
CPICH_Ec/lor	dB	n	.a.	n	.a.	-10	-10	
PCCPCH_Ec/lor	dB	-3	-3			-12	-12	
SCH_Ec/Ior	dB	-9	-9	-9	-9	-12	-12	
SCH_t _{offset}		0	0	0	0	n.a.	n.a.	
PICH_Ec/Ior	<u>dB</u>			-3	-3	-15	-15	
OCNS <u>Ec/lor</u>	dB	-4,28	-4,28	-4,28	-4,28	-0,941	-0,941	
\hat{I}_{or}/I_{oc}	dB	3	-2	3	-2	-2	3	
I _{oc}	dBm/3 .84 MHz	-70						
CPICH_RSCP	dBm	n	.a.	n	.a.	-82	-77	
PCCPCH_RSCP	dBm	-70	-75			n.a.	n.a.	
Cell_ re selection_and_ reselection_quality _measure		CPICH RSCP				CPICH_RSCP		
<u>Qrxlevmin</u>	<u>dBm</u>	<u>-102</u>				<u>-1</u>	<u>15</u>	
<u>Qoffset1_{s,n}</u>	<u>dB</u>	<u>C1, C2: -12</u>				<u>C2, C</u>	<u>1: +12</u>	
<u>Qhyst1</u> _s	<u>dB</u>	<u>0</u>				<u>0</u>		
Treselection	s	0				()	
Sintersearch	<u>dB</u>		not	sent		not	sent	
Propagation Condition			AW	/GN		AW	GN	

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.

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.

3GPP TSG RAN WG4 Meeting #19

Edinburgh, Great Britain, 3rd - 7th September 2001

CHANGE REQUEST								
ж	5.123 CR 89 [#]	ev _ [#] Current version: 4.1.0 [#]						
For <u>HELP</u> on us	g this form, see bottom of this pag	e or look at the pop-up text over the % symbols.						
Proposed change a	ects: ೫ (U)SIM ME/UE	X Radio Access Network X Core Network						
Title: ೫	Section 4 corrections and clarificati	ons in the test cases						
Source: ೫	RAN WG4							
Work item code: %		Date: ೫ 2001-09-03						
	 A Se <u>one</u> of the following categories: F (correction) A (corresponds to a correction in a B (addition of feature), C (functional modification of feature) D (editorial modification) etailed explanations of the above categories a found in 3GPP <u>TR 21.900</u>. 	e) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999)						
Reason for change:	before the UE enters any cell s find any suitable cell among th control system informationTh started is enlarged to 30s. Con because the mapping function	to document R4-010873. The time that expires selection state is still [TBD], in case UE does not be neighbour cells indicated in the measurement e time T1 before the multi-carrier test cases are nments on the mapping functions are removed s wee removed in WG2 specifications. The used in information is currently only in the informative						
Summary of change	# "12 s" inserted instead of [TBD tables. Test cases are clarified) value. Tsi is included in the test parameter						
Consequences if not approved:	# TBD value remaining in specific cases are incorrect.	ication. Inconsistency between releases. Test						
Clauses affected:	<mark># 4.2.2.1.1, A4</mark>							
Other specs affected:	 Contractions Contractions Contractions Contractions Contractions 	*						
Other comments:	¥							

How to create CRs using this form:

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

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

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

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

4.2.2 Requirements

4.2.2.1 Measurement and evaluation of cell selection criteria S_{rxlev} of serving cell

4.2.2.1.1 3.84 Mcps TDD option

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

If the UE has evaluated in N_{serv} successive measurements that the serving cell does not fulfil the cell selection criterion S_{rxlex} , the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities. If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells

indicated in the measurement control system information for $\frac{12s[TBD] s}{s}$, the UE shall initiate cell selection procedures for the selected PLMN as defined in TS25.304.

4.2.2.1.2 1.28 Mcps TDD option

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

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

If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for [TBD] s, the UE shall initiate cell selection procedures for the selected PLMN as defined in TS25.304.

NEXT CHANGED section

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

A.4.2.1.1 Test Purpose and Environment

A.4.2.1.1.1 3.84 Mcps TDD option

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.

F	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3, Cell4,	
			Cell5, Cell6	
Final	Active cell		Cell2	
condition				
<u>HCS</u>			Not used	
		<u>dBm</u>		
<u>UE T</u>	<u>UE TXPWR MAX RACH</u>		<u>21</u>	The value shall be used for all cells in the test.
	Qrxlevmin		<u>-102</u>	The value shall be used for all cells in the test.

Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
\underline{T}_{SI}	<u>s</u>	<u>1.28</u>	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.4.2: Cell re-selection single carrier multi-cell case

Parameter	Unit		Cell 1				Cell 2				Cell 3			
Timeslot Number		(0 8		8 0		0 8		8	0		1	8	
		T1	T2	T1	Т2	T1	Т2	T1	T2	T1	Т2	T1	T2	
UTRA RF Channel Number			Channel 1			Channel 1				Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/Ior	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/Ior	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/Ior	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	
\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			
Qoffset <u>1_{s,n}</u>	<u>dB</u>		<u>C1, C2: 0; C1, C3:0; C1,C4:0</u> <u>C1, C5:0; C1,C6:0</u>			<u>C2, C1: 0; C2, C3:0; C2,C4:0</u> <u>C2, C5: 0; C2:C6:0</u>				- <u>C3, C1: 0; C3, C2:0; C3,C4:0</u> <u>C3, C5: 0; C3:C6:</u> 0				

Qhyst <u>1</u> s Treselection	<u>dB</u> s		(0 0 0						0 0 0				
Sintrasearch	dB		not) sent sent		u not sent not sent				0 not sent not sent				
			Cell 4				Cell 5				Cell 6			
Timeslot		(0 8			(0 8				0	8		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1				
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/Ior	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 <u>Ec/lor</u>	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	
\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			
Qoffset <u>1_{s,n}</u>	<u>dB</u>		<u>C4, C5:</u> 0	C2:0; C4; C4:C6:0		<u>C5, C1:</u> 0 <u>; C5, C2:0; C5,C3:0</u> <u>C5, C4:0; C5:C6:</u> 0				<u>C6, C1: 0; C6, C2:0; C6,C3:0</u> <u>C6, C4:0; C6:C5:</u> 0				
Qhyst <u>1</u> s	<u>dB</u>))))))		
Treselection	s			0 0				C C))		
Sintrasearch	dB			sent		not sent not sent				not sent not sent				
I _{oc}	dBm/3, 84 MHz		not sent				-70							
Propagation Condition						AWGN								

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.

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

	Parameter	Unit	Value	Comment
Initial	Initial Active cell		Cell1	
condition	condition Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition			Cell2	
Access Service Class (ASC#0) - Persistence value		01	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.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.

T1	S	15	
T2	S	15	

Parameter	Unit		Ce	11 1		Cell 2					Ce	11 3		
Timeslot Number			0	DW	DWPTS		0	DW	PTS	0		DWPTS		
		T1	T2	T 1	T2	T1	T2	T1	T2	T1	T2	T 1	T2	
UTRA RF Channel Number			Chan	inel 1			Chan	nel 1			Chan	inel 1		
PCCPCH_Ec/lor	DB	-3	-3			-3	-3			-3	-3			
DwPCH_Ec/Ior	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]			
Qoffset		[[0])]	[(0]	[0]	[0]	[0]	
Qhyst			[0]		0]	[0]		[0]		[0]		[0]		
Treselection	S		[0]		[0]		[0]		[0]		[0] [0]			
Sintrasearch	DB	not sent not sent			not	sent	not	sent	not	sent	not sen	t		
			Cell 4				Cell 5				Cell 6			
Timeslot			0	DWPTS		0		DWPTS		0		DWPTS		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Chan	nel 1			Chan	nel 1		Chan		inel 1		
PCCPCH_Ec/Ior	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]			
Qoffset	1]	0]	[0]	[0]	[0]]	0]	[0]	
Qhyst			0]		0]	[0]	[0]		0]		0]	
Treselection	S		0]		0]		0]		0]		0]		[0]	
Sintrasearch	DB	[not	sent]	[not	sent]	[not	sent]	[not	sent]	[not	sent]	[not	sent]	
I _{oc}	dBm/1. 28 MHz						-7	70						
Propagation Condition			AWGN											

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

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.

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 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 the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

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

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

A.4.2.2.1.1 3.84 Mcps TDD option

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	Neighbour cells		Cell2, Cell3,Cell4,	
			Cell5, Cell6	
Final	Active cell		Cell2	
condition				
	<u>HCS</u>		Not used	
UE TXPW	<u>UE TXPWR MAX RACH</u>		<u>21</u>	The value shall be used for all cells in the test.
Qrxlevmin		<u>dBm</u>	<u>-102</u>	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
- Pe	ersistence value		1	by the random access procedure. The value
				shall be used for all cells in the test.
	T _{SI}		<u>1.28</u>	The value shall be used for all cells in the test.
DF	DRX cycle length		1.28	The value shall be used for all cells in the test.
	T1	S	<u>30</u> 15	
	T2	S	15	

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

Parameter	Unit	Cell 1					Ce	11 2		Cell 3			
Timeslot Number		0		8		0		8		0		8	8
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Channel 1				Chan	nnel 2		Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	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/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	3	0	3	0	0	3	0	3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-70	-73			-73	-70			-76	-76		
Qoffset <u>1_{s.n}</u>	<u>dB</u>	<u>C</u> <u>C1,C</u>	<u>1, C2: </u> 0; 4:0C1, C	<u>C1, C3:</u> C5:0; C1:	<u>0;</u> <u>C6:</u> 0	<u>C2, C1: 0; C2, C3:0;</u> <u>C2,C4:0C2, C5:0; C2:C6:</u> 0				<u>C3, C1: 0; C3, C2:0; C3,C4:0</u> <u>C3, C5:0; C3:C6:</u> 0			
Qhyst <u>1</u> s	<u>dB</u>		(())))		0 0			
Treselection	S))			0			0 0			
Sintrasearch	dB	not sent			not sent not sent			not sent not sent					
Sintersearch	<u>dB</u>		not	<u>sent</u>		not sent			not sent				

			Cell 4 Cell 5 Cel			11 6							
Timeslot		0)	8	8	()	8	3)	8	3
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1			Channel 2					Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t _{offset}	110	15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/Ior OCNS	dB	-4,28	-4,28	-3 -4,28	-3 -4,28	-4,28	-4,28	-3 -4,28	-3 -4,28	-4,28	-4,28	-3 -4,28	-3
	dB dB	-4,28	-4,28	-4,28	-4,28	-4,28 -3	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28 -3
\hat{I}_{or}/I_{oc}	aв	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76		
Qoffset <u>1_{s,n}</u>	<u>dB</u>			<u>C2:0; C4; C4:C6:</u>		<u>C5, C1: 0; C5, C2:0; C5,C3:0</u> <u>C5, C4:0; C5:C6:</u> 0			<u>C6, C1: 0; C6, C2:0; C6,C3:0</u> <u>C6, C4:0; C6:C5:</u> 0				
Qhyst <u>1_s</u>	<u>dB</u>		())		0				0			
Treselection	S))))		0 0			
Sintrasearch	dB		not not -					sent sent		not sent not sent			
Sintersearch	<u>dB</u>		<u>not</u>	sent			not	<u>sent</u>			not	<u>sent</u>	
I _{oc}	dBm/3, 84 MHz		-70										
Propagation Condition							AW	/GN					

A.4.2.2.1.2 1.28 Mcps TDD option

This scenario implies the presence of 2 carriers and 6 cells as given in Table A.4.3A and A.4.4A. For this test purpose the broadcast repetition period of the target cell shall be [x] s.

Table A.4.3A: 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	
	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.
	DRX cycle length		1.28	The value shall be used for all cells in the test.
	T1	S	15	
	T2	S	15	

Parameter	Unit		Ce	11 1			Ce	11 2			Ce	11 3	
Timeslot Number		()	DW	PTS		0	DW	PTS		0	DW	PTS
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Chan	inel 1			Chan	nel 2			Chan	nel 1	
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
\hat{I}_{or}/I_{oc}	dB	[9]	[7]	[9]	[7]	[7]	[9]	[7]	[9]	[-1]	[-1]	[-1]	[-1]
PCCPCH RSCP	dBm	[-64]	[-66]			[-66]	[-64]			[-74]	[-74]		
Qoffset]	0]	[0]]	0]]	0]]	0]	[]	0]
Qhyst Treselection Qintrasearch	s dB	[0] 0] sent]		0] 0] sent]	[0] 0] sent]]	0] 0] sent]	[0] [0] [not sent]		[0] [0] [not sent]	
			Ce	11 4			Ce	11 5		Cell 6			
Timeslot		()	DW	PTS		0	DW	PTS		0	DW	PTS
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Cha	nnel	I		Chan	inel 2			Cha	nnel	L
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]		
Qoffset		[(0]	[0]	[0]	[[0] [0]		[]	0]	
Qhyst						0]		0]		0]		0]	
Treselection	S ID		0]		0]		0]		[0]		0]		[0]
Qintrasearch I _{oc}	dB dBm/3, 84 MHz	[not	sent]	[not	sent]	[[not	sent] -7	[<u>not</u> 70	sent]	[[not	sent]	[not	sent]
Propagation Condition							AW	/GN					

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

Note: P-CCPCH_RSCP is the quality measure for cell selection and re-selection.

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.

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.4.2.2.2.2 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 RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

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

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. 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 TDD cell 2 during T1 and the TDD cell 2 is better ranked than the 1.28 Mcps TDD OPTION cell 1 during T2. 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 reselection

	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	
(ASC#0)	ervice Class tence 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.

DRX cycle length	S	1,28	
T1	S	15	Cell 1 better ranked than cell 2
T2	S	15	Cell2 better ranked than cell 1

Parameter	Unit		Ce	ll 1			Cell 2				
Timeslot Number		()	Dw	Pts	0		8			
		T1	T2	T 1	Т 2	T1	T2	T 1	T 2		
UTRA RF Channel Number			Char	mel 1			Chan	nel 2	nel 2		
PCCPCH_Ec/lor	dB	-3	-3			-3	-3				
DwPCH_Ec/Ior	dB	0 0		n.	.a.	n.a.					
SCH_Ec/Ior	dB	n.	a.	n.	n.a.		-9	-9	-9		
SCH_t _{offset}		n.	a.	n.	a.	0	0	0	0		
PICH_Ec/Ior								-3	-3		
OCNS	dB	n.	a.	n.	a.	-4,28	-4,28	-4,28	-4,28		
\hat{I}_{or}/I_{oc}	dB	[10]	[7]			[7]	[10]	[7]	[10]		
I _{oc}	dBm/3.8 4 MHz				-"	70					
PCCPCH_RSCP	dBm	[-63]	[-66]			[-66]	[-63]				
Treselection	S		(C			()			
Propagation Condition			AW	/GN			AW	'GN			

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

A.4.2.2A.2 Test Requirements

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

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

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. 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 FDD cell 2 during T1, and the FDD cell 2 is better ranked (indicating a cell re selection according to section 4.2.2.4) than the TDD cell 1 during T2. 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	
<u>UE</u> T	XPWR MAX RACH	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in the test.

Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
<u>T_{SI}</u>	<u>S</u>	<u>1.28</u>	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	<u>30</u> 15	During T1 cell 1 better ranked than cell 2
T2	S	15	During T2 cell 2 better ranked than cell 1

Parameter	Unit		Ce	ll 1		С	ell 2	
Timeslot Number		(0	5	8	n.a	n.a.	
		T1	T2	T 1	T 2	T 1	Т 2	
UTRA RF Channel Number			Chan	inel 1		Channel 2		
CPICH_Ec/Ior	dB	n.a. n.a.			.a.	-10	-10	
PCCPCH_Ec/Ior	dB	-3	-3			-12	-12	
SCH_Ec/Ior	dB	-9	-9	-9	-9	-12	-12	
$SCH_{t_{offset}}$		0	0	0	0	n.a.	n.a.	
PICH_Ec/Ior	<u>dB</u>			-3	-3	-15	-15	
OCNS <u>Eclor</u>	dB	-4,28	-4,28	-4,28	-4,28	-0,941	-0,941	
\hat{I}_{or}/I_{oc}	dB	3	-2	3	-2	-2	3	
I _{oc}	dBm/3.84 MHz				-7	0		
CPICH_RSCP	dBm	n.	.a.	n	.a.	-82	-77	
PCCPCH_RSCP	dBm	-70	-75			n.a.	n.a.	
Cell_ <u>re</u> selection_and <u>reselection_</u> quality _measure			<u>CPICH</u>	RSCP		CPICH_RSCP		
<u>Qrxlevmin</u>	<u>dBm</u>		<u>-1</u>	<u>02</u>		<u> </u>	<u>115</u>	
<u>Qoffset1_{s,n}</u>	<u>dB</u>		<u>C1, C</u>	<u>2: -12</u>		<u>C2, C</u>	<u>C1: +12</u>	
<u>Qhyst1</u> _s	<u>dB</u>		(<u>)</u>			<u>0</u>	
Treselection	S		()		0		
Propagation Condition			AW	'GN		AV	VGN	

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.4.2.3.1.2 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.

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 FDD cell 2 during T1 and the FDD cell 2 is better ranked than the 1.28 Mcps TDD OPTION cell 1 during T2. Cell 1 and cell 2 shall belong to different Location Areas.

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

	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	
(ASC#0)	Service Class stence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall

			be used for all cells in the test.
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.4.6A: Test parameters for the 1.28 Mcps TDD OPTION/FDD cell re-selection

Parameter	Unit		Ce		Cell 2			
Timeslot Number		0		Dw	DwPts		a.	
		T1	T2	T 1	Т2	T1	T2	
UTRA RF Channel Number		Channel 1				Char	Channel 2	
PCCPCH_Ec/lor	dB	-3	-3			-12	-12	
DwPCH_Ec/Ior	dB	0		0	0	n	a.	
CPICH_Ec/lor	dB	n.	a.	n.a.		-10	-10	
SCH_Ec/Ior	dB	n.	.a.	n	n.a.		-12	
PICH_Ec/Ior						-15	-15	
OCNS	dB	n.	a.	n.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_Ec/Io			n.	.a.		[]	[]	
Treselection	S	0 0)	
Propagation Condition				AW	/GN			

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.

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.

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.

3GPP TSG RAN WG4 Meeting #19

Edinburgh, Great Britain, 3rd - 7th September 2001

CHANGE REQUEST			
ж	25.123 CR 90 # ev - # Current version: 3.6.0 #		
For <u>HELP</u> on	sing this form, see bottom of this page or look at the pop-up text over the X symbols.		
Proposed change	affects: 第 (U)SIM ME/UE X Radio Access Network X Core Network		
Title: #	General section 5 corrections		
Source: #	RAN WG4		
Work item code:₩	Date: 米 2001-05-21		
Category: ¥	FRelease: #Rel99Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99Detailed explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5		
Reason for chang	Currently the SFN decoding is not taken into account in the HO interruption time in cases where this is necessary. The formula for Inter-RAT (GSM) measurements in Cell-Fach state has to be corrected. Clarification of the wording.		
Summary of chang	SFN decoding is taken into account for inter-frequency HO interruption times. The formula used for GSM measurements is clarified.		
Consequences if not approved:	Incorrect requirement for HO interruption time. Inconsistency between section 5.4 and section 8.1.		
Clauses affected:	<mark>ቼ 5.1, 5.4, 5.5, 5.6</mark>		
Other specs affected:	# Other core specifications # Test specifications O&M Specifications		
Other comments:	¥		

How to create CRs using this form:

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

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

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

5.1 TDD/TDD Handover

5.1.1 Introduction

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

5.1.2 Requirements

5.1.2.1 TDD/TDD Handover delay

Procedure delay for all procedures, that can command a handover, are specified in TS25.331 section 13.5.2. When the UE receives a RRC message implying handover with the activation time "now" or earlier than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH within $D_{handover}$ seconds from the end of the last TTI containing the RRC command.

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

where:

 $D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.1.2.2.

5.1.2.2 Interruption time

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

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

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

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

- a handover with timing maintain is commanded by the UTRAN or

- the SFN of the target cell is known by the UE

TDD/TDD handover case		Maximum delay [ms]		
	One Known Cell in HO command		One -Unknow com r	
	SFN not to be decoded	SFN needs to be decoded	SFN not to be decoded	SFN needs to be decoded
Intra-frequency	40	70	350	400
Inter-frequency	40	<u>70</u>	350	<u>400</u>

Table 5.1 TDD/TDD handover – interruption time

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

The requirement in Table 5-1 for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

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

5.2 TDD/FDD Handover

5.2.1 Introduction

The purpose of TDD/FDD handover is to change the mode between FDD and TDD. The handover procedure is initiated from UTRAN with a handover command message, refer to TS25.331. The handover procedure causes the UE to change its frequency.

5.2.2 Requirements

These requirements shall apply only to TDD/FDD UE.

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

5.2.2.1 Handover delay

Procedure delay for all procedures, that can command a hard handover, are specified in TS25.331 section 13.5.2. When the UE receives a RRC message implying hard handover with the activation time "now" or earlier than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCCH within $D_{handover}$ seconds from the end of the last TTI containing the RRC command.

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

where:

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

5.2.2.2 Interruption time

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

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

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

•
Table 5.2 TDD/FDD interruption time

cell present in the	Maximum delay [ms]		
handover command	Known Cell		Unknown cell
message	SFN not to	SFN needs	SFN needs to be
	be decoded	<u>to be</u>	decoded
		decoded	
1	[100]	[130]	[<u>400</u> 350]

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

The requirement in Table 5-2 for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

NEXT CHANGED SECTION

5.4 Cell Re-selection in Cell_FACH

5.4.1 Introduction

5.4.1 Introduction

When a Cell Re-selection process is triggered according to 25.331, the UE shall evaluate the cell re-selection criteria specified in TS 25.303, based on radio measurements, and if a better cell is found that cell is selected.

5.4.2 Requirements

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

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

5.4.2.1 Measurements

The UE measurement capability according to section 8.4.2.1 shall apply.

5.4.2.2 Cell re-selection delay

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

5.4.2.2.1 Intra-frequency cell re-selection

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

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

where

 $T_{identify_intra}$ = Specified in 8.4.2.2.1.

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

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

5.4.2.2.2 Inter-frequency TDD cell re-selection

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

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

 $T_{identify_{inter}} = Specified in 8.4.2.3.1$

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

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

5.4.2.2.3 Inter-frequency FDD cell re-selection

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

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

where

 $T_{identify, FDD} = Specified in 8.4.2.4.1$

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

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

5.4.2.2.4 Inter-RAT cell re-selection

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

$$T_{\text{reselection, GSM}} = T_{\text{identify, GSM}} + T_{\text{Measurement}_{\text{GSM}}} + T_{\text{SI}}$$

where

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

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

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

 N_{carriers} is the number of GSM carriers in the Inter-RAT cell info list

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

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

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

5.4.2.3 Maximum interruption in FACH message reception

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

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

5.5 Cell Re-selection in Cell_PCH

5.5.1 Introduction

When a Cell Re-selection process is triggered according to 25.331, tThe UE shall evaluate the cell re-selection criteria specified in TS 25.304, based on radio measurements, and if a better cell is found that cell is selected.

5.5.2 Requirements

Requirements for cell re-selection in Cell_PCH state are the same as for cell re-selection in idle mode, see section 4.2. The UE shall support all DRX cycle lengths in table 4.1, according to TS25.331.

5.6 Cell Re-selection in URA_PCH

5.6.1 Introduction

When a Cell Re selection process is triggered according to 25.331, tThe UE shall evaluate the cell re-selection criteria specified in TS 25.304, based on radio measurements, and if a better cell is found that cell is selected.

5.6.2 Requirements

Requirements for cell re-selection in URA_PCH state are the same as for cell re-selection in idle mode, see section 4.2. The UE shall support all DRX cycle lengths in table 4.1, according to TS25.331.

3GPP TSG RAN WG4 Meeting #19

Edinburgh, Great Britain, 3rd - 7th September 2001

CHANGE REQUEST			
ж	<mark>25.123</mark> CR <mark>91 [#] ev -</mark> [#] C	Current version: 4.1.0 [#]	
For <u>HELP</u> on us	ing this form, see bottom of this page or look at the p	pop-up text over the X symbols.	
Proposed change a	ffects: ೫ (U)SIM ME/UE X Radio Acce	ess Network X Core Network	
Title: ೫	General section 5 corrections		
Source: ೫	RAN WG4		
Work item code: ₩		Date: ೫ <mark>2001-09-03</mark>	
	A F Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP <u>TR 21.900</u> .	Release: %Rel-4Use one of the following releases:2(GSM Phase 2)R96R97(Release 1996)R97R98(Release 1997)R99Release 1998)R99REL-4(Release 4)REL-5(Release 5)	
Reason for change:	 Corresponding REL-4 Cr to R4-010875. Current into account in the HO interruption times in case formula for Inter-RAT (GSM) measurements in corrected. Clarification of the wording. 	ses where this is necessary. The	
Summary of change	SFN decoding is taken into account for inter-free The formula used for GSM measurements is cl		
Consequences if not approved:	Incorrect requirement for HO interruption time. 5.4 and section 8.1.	Inconsistency between section	
Clauses affected:	₭ 5.1, 5.4, 5.5, 5.6		
Other specs affected:	# Other core specifications # Test specifications O&M Specifications		
Other comments:	¥		

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

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

5.1 TDD/TDD Handover

5.1.1 Introduction

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

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

5.1.2 Requirements

5.1.2.1 TDD/TDD Handover delay

5.1.2.1.1 3.84 Mcps TDD option

Procedure delay for all procedures, that can command a handover, are specified in TS25.331 section 13.5.2. When the UE receives a RRC message implying handover with the activation time "now" or earlier than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH within $D_{handover}$ seconds from the end of the last TTI containing the RRC command.

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

where:

 $D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.1.2.2.1.

5.1.2.1.2 1.28 Mcps TDD option

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

When the UE receives a RRC message that implies a handover, with the activation time "now" or earlier than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall start transmission $D_{handover}$ seconds from the end of the last TTI containing the RRC command.

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

where:

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

5.1.2.2 Interruption time

5.1.2.2.1 3.84 Mcps TDD option

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

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

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

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

- <u>a handover with timing maintain is commanded by the UTRAN or</u>

- the SFN of the target cell is known by the UE or

TDD/TDD handover case		Maximum delay [ms]		
	One Knowr	One Known Cell in HO		n Cell in HO
	com	command		mand
	SFN not to	SFN needs	SFN not to	SFN needs
	be decoded	to be	be decoded	to be
		decoded		decoded
Intra-frequency	40	<u>70</u>	350	<u>400</u>
Inter-frequency	40	<u>70</u>	350	<u>400</u>

Table 5.1 TDD/TDD handover – interruption time

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

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

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

5.1.2.2.2 1.28 Mcps TDD option

The interruption time i.e. the time between the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCCH, shall be less than the value in table 5.1A. There is different requirement on the interruption time depending on if the cell is known or not.

A cell shall be regarded as known by the UE if

it has been measured during the last 5 seconds or

a dedicated connection existed between the UE and the cell during the last 5 seconds.

Table 5.1A: TDD/ TDD handover – interruption time

cell in the handover command	Maximum delay [ms]	
message	Known Cell	Unknown Cell
1	[40]	[350]

The interruption time includes the time that can elapse till the appearance of the channel required for the synchronisation. And the time that can elapse till the appearance of the DwPTS in which the new uplink SYNC1 shall be transmitted ,or in case of high chip rate TDD the new uplink DPCH, shall be transmitted , which can be up to one frame (10ms).

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

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

5.2 TDD/FDD Handover

5.2.1 Introduction

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

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

5.2.2 Requirements

These requirements shall apply only to TDD/FDD UE. The requirements do not apply if FDD macro-diversity is used.

5.2.2.1 Handover delay

5.2.2.1.1 3.84 Mcps TDD option

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

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

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

where:

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

5.2.2.1.2 1.28 Mcps TDD option

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

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

where:

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

5.2.2.2 Interruption time

5.2.2.2.1 3.84 Mcps TDD option

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

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

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

Table 5.2 TDD/FDD) interruption time
-------------------	---------------------

cell present in the	Maximum delay [ms]		
handover command	Know	n Cell	Unknown cell
message	SFN not to be decoded	<u>SFN needs</u> <u>to be</u> <u>decoded</u>	<u>SFN needs to be</u> <u>decoded</u>
1	[100]	[130]	[<u>400</u> 350]

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

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

5.2.2.2.2 1.28 Mcps TDD option

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCCH, shall be less than the value in table 5.2A There is different requirement on the depending on if the cell is known or not.

Table 5.2A: 1.28 Mcps TDD/FDD interruption time

cell in the handover command	Maximum update delay [ms]	
message	Known Cell	Unknown Cell
1	[100]	[350]

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

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

5.3 TDD/GSM Handover

5.3.1 Introduction

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

5.3.2 Requirements

These requirements shall apply only to TDD/GSM UE.

This clause presents some of the important aspects of GSM handover required to be performed by the UE. The underlying requirement is to ensure continuity of service to the UMTS user. The handover requirements for 3G to GSM should be comparable to GSM to GSM handover requirements.

5.3.2.1 Handover delay

5.3.2.1.1 3.84 Mcps TDD option

When the UE receives a RRC HANDOVER FROM UTRAN COMMAND with the activation time "now" or earlier than the value in Table 5.3 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM 05.10) on the new channel of the new RAT within the value in Table 5.3 from the last TTI containing the RRC command. If the access is delayed to an indicated activation time later than the value in Table 5.3 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM 05.10) on the channel of the new RAT at the designated activation time. The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms. If the activation time is used, it corresponds to the CFN of the UTRAN channel.

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

5.3.2.1.2 1.28 Mcps TDD option

When the UE receives a RRC HANDOVER COMMAND with the activation time "now" or earlier than the value in Table 5.3A from the end of the last TTI containing the RRC command, the UEit shall be ready to transmit (as specified in GSM 45.010) on the new channel within the new RAT within the value in Table 5.3A from the last TTI containing the RRC command, If the access is delayed to an indicated activation time later than the value in Table 5.3A from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM 45.010) on the channel of the new RAT at the designated activation time. The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms. If the activation time is used, it corresponds to the CFN of the UTRAN channel.

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

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

5.3.2.2 Interruption time

5.3.2.2.1 3.84 Mcps TDD option

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

Table 5.4: TDD/GSM handover - interruption time

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

5.3.2.2.2 1.28 Mcps TDD option

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

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

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

5.4 Cell Re-selection in Cell_FACH

5.4.1 Introduction

When a Cell Re-selection process is triggered according to 25.331, the UE shall evaluate the cell re-selection criteria specified in TS 25.304, based on radio measurements, and if a better cell is found that cell is selected.

5.4.2 Requirements for 3.84Mcps TDD option

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

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

5.4.2.1 Measurements

The UE measurement capability according to section 8.4.2.1 shall apply.

5.4.2.2 Cell re-selection delay

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

5.4.2.2.1 Intra-frequency cell re-selection

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

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

where

T_identify_ intra=Specified in 8.4.2.2.1.T_SI=Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell.

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

5.4.2.2.2 Inter-frequency TDD cell re-selection

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

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

$T_{identify_inter} = S_{identify_inter}$	Specified in 8.4.2.3.1
---	------------------------

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

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

5.4.2.2.3 Inter-frequency FDD cell re-selection

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

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

where

T _{identify, FDD}	=Specified in 8.4.2.4.1
T _{SI}	=Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell.

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

5.4.2.2.4 Inter-RAT cell re-selection

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

 $T_{\text{reselection, GSM}} = T_{\text{identify, GSM}} + T_{\text{Measurement}_{GSM}} + T_{SI}$

where

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

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

$$T_{\text{measurement, GSM}} = 8 \cdot \frac{N_{carriers}}{N_{GSM carrier RSSI}} \cdot T_{meas}$$

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

N_{carriers} is the number of GSM carriers in the Inter-RAT cell info list

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

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

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

5.4.2.3 Maximum interruption in FACH message reception

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

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

5.4.3 Requirements for 1.28Mcps TDD option

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

5.4.3.1 Measurements

The UE measurement capability according to section 8.1A shall apply.

5.4.3.2 Cell re-selection delay

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

5.5 Cell Re-selection in Cell_PCH

5.5.1 Introduction

When a Cell Re selection process is triggered according to 25.331, tThe UE shall evaluate the cell re-selection criteria specified in TS 25.304, based on radio measurements, and if a better cell is found that cell is selected.

5.5.2 Requirements

5.5.2.1 3.84 Mcps option

Requirements for cell re-selection in Cell_PCH state are the same as for cell re-selection in idle mode, see section 4.2. The UE shall support all DRX cycle lengths in table 4.1, according to TS25.331.

5.5.2.2 1.28 Mcps option

Requirements for cell re-selection in Cell_PCH state are the same as for cell re-selection in idle mode, see section 4.2. The UE shall support all DRX cycle lengths in table 4.1A, according to TS25.331.

5.6 Cell Re-selection in URA_PCH

5.6.1 Introduction

When a Cell Re selection process is triggered according to 25.331, tThe UE shall evaluate the cell re-selection criteria specified in TS 25.304, based on radio measurements, and if a better cell is found that cell is selected.

5.6.2 Requirements

5.6.2.1 3.84 Mcps option

Requirements for cell re-selection in URA_PCH state are the same as for cell re-selection in idle mode, see section 4.2. The UE shall support all DRX cycle lengths in table 4.1, according to TS25.331.

5.6.2.2 1.28 Mcps option

Requirements for cell re-selection in URA_PCH state are the same as for cell re-selection in idle mode, see section 4.2. The UE shall support all DRX cycle lengths in table 4.1A, according to TS25.331.

3GPP TSG RAN WG4 Meeting #19

Edinburgh, Great Britain, 3rd - 7th September 2001

	CHANGE REQUEST											
ж	25.123 CR 92 [#] ev _ [#] Current version: 3.6.0 [#]											
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the # symbols.												
Proposed change a	ffects: 第 (U)SIM ME/UE X Radio Access Network X Core Network											
Title: ೫	Introduction of intra- and inter-frequency test cases for Cell-PCH and URA-PCH											
Source: ೫	RAN WG4											
Work item code: #	Date:											
	FRelease: %Rel99Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99Detailed explanations of the above categories canREL-4REL-4(Release 4)B found in 3GPP TR 21.900.REL-5											
Reason for change:	# Introduction of missing test cases											
Summary of change	PCH state are introduced.											
Consequences if not approved:	郑 Missing test cases!											
Clauses affected:	¥ A5.5, A5.6											
Other specs affected:	Image: Second system Image: Second system Image: Second											
Other comments:	ж											

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

A.5.4 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.5.5 Cell Re-selection in CELL_PCH

NOTE: Requirements for cell re selection in Cell_PCH state are the same as for cell re selection in idle mode, therefore no separate test cases are required.

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.5.1 and A.5.2.

Table A.5.1: General test parameters for Cell Re-selection single carrier multi-cell case

F	Parameter	Unit	<u>Value</u>	Comment
<u>Initial</u>	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3, Cell4,	
	-		Cell5, Cell6	
<u>Final</u>	Active cell		Cell2	
condition				
	<u>HCS</u>		Not used	
<u>UE_</u> TXP	WR_MAX_RACH	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in the test.
	<u>Qrxlevmin</u>	<u>dBm</u>	<u>-102</u>	The value shall be used for all cells in the test.
Access Se	rvice Class (ASC#0)			Selected so that no additional delay is caused by
- Pe	rsistence value		<u>1</u>	the random access procedure. The value shall be
			_	used for all cells in the test.
	$\underline{\mathbf{T}}_{SI}$		<u>1.28</u>	The value shall be used for all cells in the test.
DR	DRX cycle length		<u>1.28</u>	The value shall be used for all cells in the test.
	<u>T1</u>	<u>s</u>	<u>15</u>	
	<u>T2</u>	<u>s</u>	<u>15</u>	

Table A.5.2: Cell re-selection single carrier multi-cell case

1

Parameter	<u>Unit</u>		Ce	<u>ll 1</u>		<u>Cell 2</u>				<u>Cell 3</u>			
<u>Timestot Number</u>		<u>0</u> <u>8</u>		<u> </u>	<u>0</u> <u>8</u>			<u>(</u>	<u>)</u>	<u>8</u>	<u> 8</u>		
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel</u> Number			<u>Chan</u>	<u>inel 1</u>			<u>Chan</u>	<u>inel 1</u>			<u>Chan</u>	<u>nel 1</u>	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>		
<u>SCH_Ec/Ior</u> <u>SCH_t_{offset}</u>	<u>dB</u>	<u>-9</u> 0	<u>-9</u> 0	<u>-9</u> 0	<u>-9</u> 0	<u>-9</u> 5	<u>-9</u> 5	<u>-9</u> 5	<u>-9</u> 5	<u>-9</u> 10	<u>-9</u> 10	<u>-9</u> 10	<u>-9</u> 10
<u>PICH_Ec/Ior</u>	dB	<u>U</u>	<u>U</u>	-3	<u>-3</u>	<u> </u>	<u> </u>	-3	<u>-3</u>	<u>10</u>	<u>10</u>	-3	-3
OCNS_Ec/lor	dB	-4,28	<u>-4,28</u>	-4,28	-4,28	<u>-4,28</u>	<u>-4,28</u>	-4,28	-4,28	<u>-4,28</u>	<u>-4,28</u>	-4,28	-4,28
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>
<u>PCCPCH RSCP</u>	<u>dBm</u>	<u>-64</u>	<u>-66</u>			<u>-66</u>	<u>-64</u>			<u>-74</u>	<u>-74</u>		
<u>Qoffset1_{s,n}</u>	<u>dB</u>		C1, C5:0	C3:0; C ; C1,C6:			<u>C2, C5: 0</u>	C3:0; C2:C6:			<u>1: 0; C3,</u> C3, C5: 0	; <u>C3:C6:</u>	
<u>Qhyst1</u> <u>s</u>	<u>dB</u>		_	<u>0</u>			_	<u>0</u>			_	<u>0</u>	
Treselection	<u>s</u>		<u>(</u>	<u>)</u>		<u>0</u>				<u>0</u>			
Sintrasearch	<u>dB</u>		<u>not</u>	<u>sent</u>		not sent				<u>not sent</u>			
		<u>Cell 4</u>				<u>Cell 5</u>				<u>Cell 6</u>			
<u>Timeslot</u>		<u>(</u>	<u>)</u>	<u>8</u>	<u> 8</u>	<u>0</u> <u>8</u>			<u>0</u> <u>8</u>			<u>8</u>	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel</u> Number			Chan	nel 1			Channel 1				Chan	<u>nel 1</u>	
<u>PCCPCH_Ec/Ior</u>	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>		
<u>SCH_Ec/lor</u>	<u>dB</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>
<u>SCH t_{offset} PICH Ec/Ior</u>	<u>dB</u>	<u>15</u>	<u>15</u>	<u>15</u> -3	<u>15</u> <u>-3</u>	<u>20</u>	<u>20</u>	<u>20</u> -3	<u>20</u> -3	<u>25</u>	<u>25</u>	<u>25</u> -3	<u>25</u> -3
<u>OCNS Ec/Ior</u>	<u>dB</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>
<u>PCCPCH RSCP</u>	<u>dBm</u>	<u>-74</u>	<u>-74</u>			<u>-74</u>	<u>-74</u>			<u>-74</u>	<u>-74</u>		
<u>Qoffset1_{s.n}</u>	<u>dB</u>			<u>C4, C2:</u> C5:0; C4:		<u>C5, C1: 0; C5, C2:0; C5,C3:0</u> <u>C5, C4:0; C5:C6:0</u>					1: 0; C6, C6, C4:0:		
<u>Qhyst1_s</u>	<u>dB</u>			<u>)</u>				<u>)</u>	_		<u>(</u>		
Treselection	<u>s</u>		<u>(</u>	<u>0</u>		<u>0</u>				<u>0</u>			
Sintrasearch	<u>dB</u>	<u>0</u> not sent				<u>not sent</u>			not sent				

	I _{oc}	<u>dBm/3,</u> <u>84</u> <u>MHz</u>	<u>-70</u>
Ī	Propagation Condition		AWGN

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:

$\underline{\mathbf{T}}_{evaluateTDD}$	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.
\underline{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 to	tal of 7.68 s allow 8s in the 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.5.3 and A.5.4.

Table A.5.3: General test parameters for Cell Re-selection in Multi carrier case

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

	Table A.5.4: Cell re-selection multi carrier multi cell case													
Parameter	<u>Unit</u>		<u>Ce</u>	<u>ll 1</u>			<u>Cell 2</u>				<u>Cell 3</u>			
<u>Timesiot Num</u>	<u>ber</u>	<u>(</u>	<u>)</u>	1	<u>8</u>		<u>0</u>		<u>8</u>		<u>0</u>		<u>8</u>	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
<u>UTRA RF Char</u> <u>Number</u>	<u>nnel</u>		Chan	nnel 1			Char	<u>mel 2</u>			Char	<u>mel 1</u>		
<u>PCCPCH_Ec/</u> SCH_Ec/Io		<u>-3</u> -9	<u>-3</u> -9	-9	-9	<u>-3</u> -9	<u>-3</u> -9	-9	-9	<u>-3</u> -9	<u>-3</u> -9	-9	-9	
<u>SCH_t_{offset}</u>		<u>0</u>	<u>0</u>	0	0	5	5	<u>5</u>	5	<u>10</u>	<u>10</u>	10	<u>10</u>	
<u>PICH_Ec/Io</u>				<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>	
$\frac{OCNS_Ec/Ic}{\hat{\iota}}$		<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>3</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	
PCCPCH RS	<u>CP</u> <u>dBm</u>	<u>-70</u>	<u>-73</u>			<u>-73</u>	<u>-70</u>			<u>-76</u>	<u>-76</u>			
<u>Qoffset1_{s,n}</u>	dB			<u>C1, C3:</u> C5:0; C1:			<u>C2, C1: 0; C2, C3:0;</u> <u>C2,C4:0C2, C5:0; C2:C6:0</u>				<u>C3, C1: 0; C3, C2:0; C3,C4:0</u> <u>C3, C5:0; C3:C6:0</u>			
<u>Qhyst1_s</u>	<u>dB</u>		<u>(</u>	<u>0</u>			<u>(</u>	<u>)</u>			<u>(</u>	<u>C</u>		
Treselection	<u>1 S</u>		<u>(</u>	<u>0</u>		<u>0</u>				<u>0</u>				
Sintrasearch	<u>n</u> <u>dB</u>		not	<u>sent</u>		not sent			<u>not sent</u>					
Sintersearch	<u>n dB</u>		not	<u>sent</u>			<u>not</u>	<u>sent</u>		<u>not sent</u>				

		<u>Cell 4</u>				<u>Cell 5</u>				<u>Cell 6</u>			
<u>Timeslot</u>		<u>0</u>	<u>)</u>	<u>8</u>		9	<u>0</u>		<u>8</u>		<u>0</u>		<u>8</u>
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel</u> <u>Number</u>			Chan	nel 1			Chan	nnel 2			Chan	inel 2	
<u>PCCPCH_Ec/lor</u> <u>SCH_Ec/lor</u>	<u>dB</u> <u>dB</u>	<u>-3</u> <u>-9</u> 15	<u>-3</u> <u>-9</u> 15	<u>-9</u> 15	<u>-9</u> 15	<u>-3</u> <u>-9</u> 20	<u>-3</u> <u>-9</u> 20	<u>-9</u> 20	<u>-9</u> 20	<u>-3</u> <u>-9</u> 25	<u>-3</u> <u>-9</u> 25	<u>-9</u> 25	<u>-9</u> <u>25</u>
<u>SCH_t_{offset}</u> <u>PICH_Ec/Ior</u> <u>OCNS_Ec/Ior</u>	<u>dB</u> dB	<u>-4,28</u>	<u>-4,28</u>	-3 -4,28	$-\frac{13}{-3}$ -4,28	-4,28	-4,28	<u>-3</u> -4,28	<u>-3</u> -4,28	<u>-4,28</u>	<u>-4,28</u>	<u>-3</u> -4,28	<u>-3</u> -4,28
$\frac{\hat{I}_{or}/I_{oc}}{\hat{I}_{or}}$	dB	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>
PCCPCH RSCP	<u>dBm</u>	<u>-76</u>	<u>-76</u>			<u>-76</u>	<u>-76</u>			<u>-76</u>	<u>-76</u>		
Qoffset1 _{s,n}	<u>dB</u>			C2:0; C4; C4:C6:		<u>C5, C1: 0; C5, C2:0; C5,C3:0</u> <u>C5, C4:0; C5:C6:0</u>				<u>C6, C1: 0; C6, C2:0; C6,C3:0</u> <u>C6, C4:0; C6:C5:0</u>			
<u>Qhyst1_s</u>	<u>dB</u>		<u>(</u>	<u>)</u>		<u>0</u>				<u>0</u>			
Treselection	<u>s</u>		<u>(</u>	<u>)</u>			<u>0</u>				<u>(</u>	<u>)</u>	
Sintrasearch	<u>dB</u>		<u>not sent</u>				<u>not sent</u>				<u>not</u>	<u>sent</u>	
Sintersearch	<u>dB</u>	not sent					not sent				not	<u>sent</u>	
I _{oc}	<u>dBm/3,</u> <u>84</u> <u>MHz</u>		<u>-70</u>										
Propagation Condition							AW	/ <u>GN</u>					

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:

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

<u>T</u> 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.
\underline{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 tot	al of 7.68 s, allow 8s in the test case.

A.5.6 Cell Re-selection in URA_PCH

NOTE: Requirements for cell re selection in URA_PCH state are the same as for cell re selection in idle mode, therefore no seperate test cases are required.

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 5.5.2. This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.5 and A.5.6. Cell1 and Cell2 shall belong to different UTRAN Registration Areas (URA).

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

F	Parameter	<u>Unit</u>	Value	Comment
<u>Initial</u>	Active cell		Cell1	
<u>condition</u>	Neighbour cells		Cell2, Cell3, Cell4,	
			Cell5, Cell6	
<u>Final</u>	Active cell		Cell2	
condition				
	<u>HCS</u>		Not used	
<u>UE_TXF</u>	WR_MAX_RACH	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in the test.
	<u>Qrxlevmin</u>	<u>dBm</u>	<u>-102</u>	The value shall be used for all cells in the test.
Access Se	rvice Class (ASC#0)			Selected so that no additional delay is caused by
<u>- Pe</u>	rsistence value		<u>1</u>	the random access procedure. The value shall be
				used for all cells in the test.
	$\underline{\mathbf{T}}_{SI}$		<u>1.28</u>	The value shall be used for all cells in the test.
DR	DRX cycle length		<u>1.28</u>	The value shall be used for all cells in the test.
	<u>T1</u>	<u>s</u>	<u>15</u>	
	<u>T2</u>	<u>s</u>	<u>15</u>	

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

<u>Parameter</u>	<u>Unit</u>		<u>Ce</u>	<u>ll 1</u>			<u>Cell 2</u>				<u>Cell 3</u>			
<u>Timeslot Number</u>		<u>0</u> <u>8</u>		<u> </u>	<u>0</u> <u>8</u>			<u>0</u> <u>8</u>			<u> 8</u>			
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
<u>UTRA RF Channel</u> Number			<u>Chan</u>	<u>inel 1</u>			<u>Char</u>	<u>inel 1</u>			<u>Chan</u>	<u>nel 1</u>		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			
<u>SCH_Ec/Ior</u> <u>SCH_t_{offset}</u>	<u>dB</u>	<u>-9</u> 0	<u>-9</u> 0	<u>-9</u> 0	<u>-9</u> 0	<u>-9</u> 5	<u>-9</u> 5	<u>-9</u> 5	<u>-9</u> 5	<u>-9</u> 10	<u>-9</u> 10	<u>-9</u> 10	<u>-9</u> 10	
PICH_Ec/Ior	dB	<u>U</u>	<u>U</u>	<u>-3</u>	<u>-3</u>	<u> </u>	<u> </u>	<u>-3</u>	<u>-3</u>	<u>10</u>	<u>10</u>	-3	<u>-3</u>	
OCNS_Ec/Ior	dB	<u>-4,28</u>	<u>-4,28</u>	-4,28	-4,28	<u>-4,28</u>	<u>-4,28</u>	-4,28	-4,28	<u>-4,28</u>	<u>-4,28</u>	-4,28	-4,28	
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	
PCCPCH RSCP	<u>dBm</u>	<u>-64</u>	<u>-66</u>			<u>-66</u>	<u>-64</u>			<u>-74</u>	<u>-74</u>			
Qoffset1 _{s,n}	<u>dB</u>			C3:0; C ; C1,C6:				C3:0; C2:C6:			<u>1: 0; C3,</u> C3, C5: 0			
<u>Qhyst1</u> _s	<u>dB</u>		_	<u>0</u>			_	<u>0</u>			_	<u>0</u>		
Treselection	<u>s</u>		<u>(</u>	<u>)</u>		<u>0</u>				<u>0</u>				
<u>Sintrasearch</u>	<u>dB</u>		not	<u>sent</u>		<u>not sent</u>				<u>not sent</u>				
		<u>Cell 4</u>				<u>Cell 5</u>				<u>Cell 6</u>				
		<u>0</u> <u>8</u>												
<u>Timeslot</u>		<u>(</u>	<u>)</u>	1	<u>8</u>	<u>(</u>	<u>)</u>	1	<u>8</u>	<u> </u>	<u>)</u>	<u>8</u>	3	
<u>Timeslot</u>		<u>(</u> <u>T1</u>	<u>)</u> <u>T2</u>	<u>1</u>	<u>3</u> <u>T2</u>	<u>9</u> <u>T1</u>	<u>)</u> <u>T2</u>	<u>1</u>	<u>8</u> <u>T2</u>	<u>9</u> <u>T1</u>	<u>)</u> <u>T2</u>	<u>1</u>	<u>3</u> <u>T2</u>	
UTRA RF Channel				<u>T1</u>			<u>T2</u>					<u>T1</u>		
<u>UTRA RF Channel</u> <u>Number</u> <u>PCCPCH Ec/Ior</u>	<u>dB</u>	<u>T1</u>	<u>T2</u> Chan	<u>T1</u> mel 1	<u>T2</u>	<u>T1</u>	<u>T2</u> Char	<u>T1</u> mel 1	<u>T2</u>	<u>T1</u>	<u>T2</u> <u>Chan</u>	<u>T1</u> nel 1	<u>T2</u>	
<u>UTRA RF Channel</u> <u>Number</u> <u>PCCPCH Ec/Ior</u> <u>SCH_Ec/Ior</u>	<u>dB</u> <u>dB</u>	<u>T1</u> - <u>3</u> - <u>9</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u>	<u>T1</u> mel 1	<u>T2</u>	<u>T1</u> - <u>3</u> - <u>9</u>	<u>T2</u> <u>Char</u> <u>-3</u> <u>-9</u>	<u>T1</u> nel 1	<u>T2</u>	<u>T1</u> - <u>3</u> - <u>9</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u>	<u>T1</u> nel 1	<u>T2</u>	
<u>UTRA RF Channel</u> <u>Number</u> <u>PCCPCH Ec/Ior</u>		<u>T1</u>	<u>T2</u> Chan	<u>T1</u> mel 1	<u>T2</u>	<u>T1</u>	<u>T2</u> Char	<u>T1</u> mel 1	<u>T2</u>	<u>T1</u>	<u>T2</u> <u>Chan</u>	<u>T1</u> nel 1	<u>T2</u>	
UTRA RF Channel Number <u>PCCPCH Ec/Ior</u> <u>SCH Ec/Ior</u> <u>SCH t_{offset} <u>PICH Ec/Ior</u> <u>OCNS Ec/Ior</u></u>	<u>dB</u>	<u>T1</u> - <u>3</u> - <u>9</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u>	<u>T1</u> mel 1 <u>-9</u> <u>15</u>	<u>T2</u> -9 15	<u>T1</u> - <u>3</u> - <u>9</u>	<u>T2</u> <u>Char</u> <u>-3</u> <u>-9</u>	<u>T1</u> mel 1 <u>-9</u> <u>20</u>	<u>T2</u> -9 20	<u>T1</u> - <u>3</u> - <u>9</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u>	<u>T1</u> nel 1 <u>-9</u> <u>25</u>	<u>T2</u> -9 25	
<u>UTRA RF Channel</u> <u>Number</u> <u>PCCPCH Ec/Ior</u> <u>SCH Ec/Ior</u> <u>SCH t_{offset} <u>PICH Ec/Ior</u></u>	<u>dB</u> <u>dB</u>	<u>-3</u> -9 15	<u>T2</u> Chan <u>-3</u> <u>-9</u> <u>15</u>	<u>T1</u> mel 1 <u>-9</u> <u>15</u> <u>-3</u>	<u>T2</u> <u>-9</u> <u>15</u> <u>-3</u>	<u>-3</u> -9 20	<u>T2</u> Char <u>-3</u> <u>-9</u> <u>20</u>	<u>T1</u> mel 1 <u>-9</u> <u>20</u> <u>-3</u>	<u>T2</u> -9 20 -3	<u>T1</u> <u>-3</u> <u>-9</u> <u>25</u>	<u>T2</u> Chan <u>-3</u> <u>-9</u> <u>25</u>	<u>T1</u> nel 1 <u>-9</u> <u>25</u> <u>-3</u>	<u>-9</u> <u>-3</u>	
UTRA RF Channel Number <u>PCCPCH Ec/Ior</u> <u>SCH Ec/Ior</u> <u>SCH t_{offset} <u>PICH Ec/Ior</u> <u>OCNS Ec/Ior</u></u>	<u>dB</u> <u>dB</u> <u>dB</u>	<u>-3</u> -9 15 -4.28	<u>T2</u> Chan <u>-3</u> <u>-9</u> <u>15</u> <u>-4,28</u>	<u>T1</u> mel 1 -9 <u>15</u> -3 -4,28	<u>-9</u> <u>15</u> <u>-3</u> <u>-4,28</u>	<u>-3</u> -9 20 -4.28	<u>T2</u> Char - <u>3</u> - <u>9</u> 20 - <u>4,28</u>	<u>T1</u> mel 1 -9 20 -3 -4.28	<u>-9</u> <u>20</u> <u>-3</u> <u>-4.28</u>	<u>-3</u> -9 25 -4.28	<u>T2</u> Chan <u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u>	<u>T1</u> mel 1 -9 25 -3 -4,28	<u>-9</u> <u>25</u> <u>-3</u> <u>-4,28</u>	
$\frac{UTRA RF Channel}{Number}$ $\frac{PCCPCH Ec/lor}{SCH Ec/lor}$ $\frac{SCH L_{offset}}{PICH Ec/lor}$ $\frac{OCNS Ec/lor}{\hat{I}_{cr}/I_{oc}}$	<u>dB</u> <u>dB</u> <u>dB</u> <u>dB</u>	<u>-3</u> <u>-9</u> <u>15</u> <u>-4.28</u> <u>-1</u> <u>-74</u>	T2 Chan -3 -9 15 -4.28 -1 -74 4, C1: 0;	<u>T1</u> nel 1 <u>-9</u> <u>15</u> <u>-3</u> <u>-4.28</u> <u>-1</u> C4, C2:	<u>-9</u> <u>15</u> <u>-3</u> <u>-4.28</u> <u>-1</u> <u>0;</u>	<u>T1</u> <u>-3</u> <u>-9</u> <u>20</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>C5, C</u>	<u>T2</u> <u>Char</u> <u>-3</u> <u>-9</u> <u>20</u> <u>-4,28</u> <u>-1</u> <u>-74</u> 1: 0; C5,	<u>T1</u> nel 1 <u>-9</u> <u>20</u> <u>-3</u> <u>-4.28</u> <u>-1</u> C2:0; C	<u>-9</u> <u>20</u> <u>-3</u> <u>-4.28</u> <u>-1</u> 5,C3:0	<u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>C6, C</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u> <u>-1</u> <u>-74</u> 1: 0; C6,	<u>T1</u> nel 1 <u>-9</u> <u>25</u> <u>-3</u> <u>-4.28</u> <u>-1</u> C2:0; C4	<u>-9</u> <u>25</u> -3 <u>-4.28</u> - <u>1</u> 5.C3:0	
$\frac{UTRA RF Channel}{Number}$ $\frac{PCCPCH Ec/lor}{SCH Ec/lor}$ $\frac{SCH Loffset}{PICH Ec/lor}$ $\frac{OCNS Ec/lor}{\hat{l}_{cr}/l_{oc}}$ $\frac{PCCPCH RSCP}{PCCPCH RSCP}$	<u>dB</u> <u>dB</u> <u>dB</u> <u>dB</u>	<u>-3</u> <u>-9</u> <u>15</u> <u>-4.28</u> <u>-1</u> <u>-74</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u> <u>15</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>4, C1: 0;</u> <u>3:0C4, C</u>	<u>T1</u> mel 1 <u>-9</u> <u>15</u> <u>-3</u> <u>-4,28</u> <u>-1</u>	<u>-9</u> <u>15</u> <u>-3</u> <u>-4.28</u> <u>-1</u> <u>0;</u>	<u>T1</u> <u>-3</u> <u>-9</u> <u>20</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>C5, C</u>	<u>T2</u> <u>Char</u> <u>-3</u> <u>-9</u> <u>20</u> <u>-4,28</u> <u>-1</u> <u>-74</u> 1: 0; C5, C5, C4:0	<u>T1</u> nel 1 <u>-9</u> <u>20</u> <u>-3</u> <u>-4,28</u> <u>-1</u>	<u>-9</u> <u>20</u> <u>-3</u> <u>-4.28</u> <u>-1</u> 5,C3:0	<u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>C6, C</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u> <u>-1</u> <u>-74</u> 1: 0; C6, <u>C6, C4:0</u>	<u>T1</u> nel 1 <u>-9</u> <u>25</u> <u>-3</u> <u>-4.28</u> <u>-1</u> C2:0; C4	<u>-9</u> <u>25</u> -3 <u>-4.28</u> - <u>1</u> 5.C3:0	
$\frac{UTRA RF Channel}{Number}$ $\frac{PCCPCH Ec/lor}{SCH Ec/lor}$ $\frac{SCH L_{offset}}{PICH Ec/lor}$ $\frac{OCNS Ec/lor}{\hat{I}_{dr}/I_{oc}}$ $\frac{PCCPCH RSCP}{Qoffset1_{s,n}}$	<u>dB</u> <u>dB</u> <u>dB</u> <u>dBm</u> <u>dBm</u>	<u>-3</u> <u>-9</u> <u>15</u> <u>-4.28</u> <u>-1</u> <u>-74</u>	$ \underline{T2} \underline{Chan} \underline{-3} \underline{-9} \underline{15} \underline{-4,28} \underline{-1} \underline{-74} \underline{4, C1: 0;} \underline{3:0C4, C} \underline{9} \underline{1} 1$	<u>T1</u> nel 1 -9 <u>15</u> -3 -4,28 -1 -1 C4, C2: C5:0; C4:	<u>-9</u> <u>15</u> <u>-3</u> <u>-4.28</u> <u>-1</u> <u>0;</u>	<u>T1</u> <u>-3</u> <u>-9</u> <u>20</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>C5, C</u>	$ \underline{T2} \underline{Char} \underline{-3} \underline{-9} \underline{20} \underline{-4.28} \underline{-1} \underline{-74} \underline{1:0;C5,C4:0} \underline{0} $	<u>T1</u> nel 1 <u>-9</u> <u>20</u> <u>-3</u> <u>-4,28</u> <u>-1</u> <u>C2:0; C</u> ; <u>C5:C6:</u>	<u>-9</u> <u>20</u> <u>-3</u> <u>-4.28</u> <u>-1</u> 5,C3:0	<u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>C6, C</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u> <u>-1</u> <u>-74</u> 1: 0; C6, <u>C6, C4:0</u>	T1 nel 1 -9 25 -3 -4,28 -1 C2:0; C0 ; C6:C5:(<u>-9</u> <u>25</u> -3 <u>-4.28</u> - <u>1</u> 5.C3:0	

	I _{oc}	<u>dBm/3,</u> <u>84</u> <u>MHz</u>	<u>-70</u>
Ī	Propagation Condition		AWGN

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 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:

$\underline{\mathbf{T}}_{evaluateTDD}$	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.
\underline{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 to	tal of 7.68 s, allow 8s in the test case

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

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

A.5.6.2.1 Test Purpose and Environment

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

	Parameter	Unit	Value	<u>Comment</u>
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4,	
			Cell5, Cell6	
<u>Final</u>	Active cell		Cell2	
condition				
	<u>HCS</u>		Not used	
<u>UE_TX</u>	PWR_MAX_RACH	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in the test.
	<u>Qrxlevmin</u>	<u>dBm</u>	<u>-102</u>	The value shall be used for all cells in the test.
	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.
	<u>Tsi</u>	<u>S</u>	<u>1.28</u>	The value shall be used for all cells in the test.
D	RX cycle length	<u>S</u>	<u>1.28</u>	The value shall be used for all cells in the test.
	<u></u> <u>T1</u>		<u>30</u>	
	<u>T2</u>	<u>S</u>	<u>15</u>	

	Table A.5.4: Cell re-selection multi carrier multi cell case													
Parameter	<u>Unit</u>		<u>Ce</u>	<u>ll 1</u>			<u>Ce</u>	<u>ll 2</u>		<u>Cell 3</u>				
<u>Timesiot Num</u>	<u>ber</u>	<u>(</u>	<u>)</u>	1	<u>8</u>		<u>0</u>		3	<u>0</u>		1	<u>8</u>	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
<u>UTRA RF Char</u> <u>Number</u>	<u>nnel</u>		Chan	nnel 1			Char	<u>mel 2</u>			Char	<u>mel 1</u>		
<u>PCCPCH_Ec/</u> SCH_Ec/Io		<u>-3</u> -9	<u>-3</u> -9	-9	-9	<u>-3</u> -9	<u>-3</u> -9	-9	-9	<u>-3</u> -9	<u>-3</u> -9	-9	-9	
<u>SCH_t_{offset}</u>		<u>0</u>	<u>0</u>	0	0	5	5	<u>5</u>	5	<u>10</u>	<u>10</u>	10	<u>10</u>	
<u>PICH_Ec/Io</u>				<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>	
$\frac{OCNS_Ec/Ic}{\hat{\iota}}$		<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>3</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	
PCCPCH RS	<u>CP</u> <u>dBm</u>	<u>-70</u>	<u>-73</u>			<u>-73</u>	<u>-70</u>			<u>-76</u>	<u>-76</u>			
<u>Qoffset1_{s,n}</u>	dB			<u>C1, C3:</u> C5:0; C1:				<u>C2, C3:</u> C5:0; C2:		<u>C3, C1: 0; C3, C2:0; C3,C4:0</u> <u>C3, C5:0; C3:C6:0</u>				
<u>Qhyst1_s</u>	<u>dB</u>		<u>(</u>	<u>0</u>			<u>(</u>	<u>)</u>			<u>(</u>	<u>C</u>		
Treselection	<u>1 S</u>		<u>(</u>	<u>0</u>		<u>0</u>				<u>0</u>				
Sintrasearch	<u>n</u> <u>dB</u>		not	<u>sent</u>		not sent				<u>not sent</u>				
Sintersearch	<u>n dB</u>		not	<u>sent</u>			<u>not</u>	<u>sent</u>		<u>not sent</u>				

			<u>Ce</u>	<u>ll 4</u>			<u>Ce</u>	<u>II 5</u>		<u>Cell 6</u>			
<u>Timeslot</u>		<u>0</u>	<u>)</u>	<u>8</u>	<u>8</u>		<u>D</u>	<u>8</u>		<u>0</u>		<u>8</u>	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel</u> <u>Number</u>			Chan	inel 1			Char	nnel 2			Chan	inel 2	
<u>PCCPCH_Ec/Ior</u>	dB	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>		
<u>SCH_Ec/Ior</u> <u>SCH_t_{offset}</u>	<u>dB</u>	<u>-9</u> 15	<u>-9</u> 15	<u>-9</u> 15	<u>-9</u> 15	<u>-9</u> 20	<u>-9</u> 20	<u>-9</u> 20	<u>-9</u> 20	<u>-9</u> 25	<u>-9</u> 25	<u>-9</u> 25	<u>-9</u> <u>25</u>
PICH_Ec/Ior	dB	<u>15</u>	<u>15</u>	-3	<u>-3</u>	20	20	-3	<u>-3</u>	<u>23</u>	<u>23</u>	-3	<u>-3</u>
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>
<u>PCCPCH RSCP</u>	<u>dBm</u>	<u>-76</u>	<u>-76</u>			<u>-76</u>	<u>-76</u>			<u>-76</u>	<u>-76</u>		
<u>Qoffset1_{s,n}</u>	<u>dB</u>			C2:0; C4; C4:C6:		<u>C5, C1: 0; C5, C2:0; C5,C3:0</u> <u>C5, C4:0; C5:C6:0</u>				<u>C6, C1: 0; C6, C2:0; C6,C3:0</u> <u>C6, C4:0; C6:C5:0</u>			
<u>Qhyst1</u> _s	<u>dB</u>		<u>(</u>	<u>)</u>			<u>(</u>	<u>0</u>		<u>0</u>			
Treselection	<u>s</u>		<u>(</u>	<u>)</u>			<u>(</u>	<u>0</u>			<u>(</u>	<u>)</u>	
Sintrasearch	<u>dB</u>		<u>not</u>	<u>sent</u>			<u>not</u>	<u>sent</u>		<u>not sent</u>			
Sintersearch	<u>dB</u>		<u>not</u>	<u>sent</u>			<u>not</u>	<u>sent</u>			<u>not</u>	<u>sent</u>	
I _{oc}	<u>dBm/3,</u> <u>84</u> <u>MHz</u>						<u>_</u>	<u>70</u>					
Propagation Condition							AW	/ <u>GN</u>					

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 CELL UPDATE message with cause "cell reselection" in cell 2. The cell re-selection delay shall be less than 8 s.

NOTE:

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

$\underline{\mathbf{T}}_{\text{evaluateTDD}}$	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.
\underline{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 tot	tal of 7.68 s, allow 8s in the test case.

3GPP TSG RAN WG4 Meeting #19

Edinburgh, Great Britain, 3rd - 7th September 2001

	CHANGE REQUEST	CR-Form-v4											
¥	25.123 CR 93 [#] ev - [#]	Current version: 4.1.0 [#]											
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Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network													
Title: ೫	Introduction of intra- and inter-frequency test case	es for Cell-PCH and URA-PCH											
Source: ೫	RAN WG4												
Work item code: ₩		Date: ₩ 2001-09-03											
	 A Jse <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release, B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP <u>TR 21.900</u>. 	Release: % Rel-4 Use <u>one</u> of the following releases: 2 (GSM Phase 2)) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)											
Reason for change:	Corresponding REL-4 CR to R4-010877. Intro	oduction of missing test cases											
Summary of change	State and inter-frequency test cases for cell representation of the state are introduced.	e-selection in Cell-PCH and URA-											
Consequences if not approved:	# Inconsistency of releases. Missing test cases	!											
Clauses affected:	業 A5.5, A5.6												
Other specs affected:	# Other core specifications # Test specifications 0&M Specifications												
Other comments:	ж												

How to create CRs using this form:

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

A.5.5 Cell Re-selection in CELL_PCH

NOTE: Requirements for cell re selection in Cell_PCH state are the same as for cell re selection in idle mode, therefore no separate test cases are required.

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 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.5.1 and A.5.2.

Table A.5.1: General test parameters for Cell Re-selection single carrier multi-cell case

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

Table A.5.2: Cell re-selection single carrier multi-cell case

1

Parameter	<u>Unit</u>		Ce	<u>ll 1</u>			Ce	<u>ll 2</u>		<u>Cell 3</u>				
<u>Timestot Number</u>		<u>(</u>	<u>)</u>	<u>8</u>	<u> 8</u>	<u>0</u> <u>8</u>				<u>(</u>	<u>)</u>	<u>1</u>	<u> 8</u>	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
<u>UTRA RF Channel</u> Number			<u>Chan</u>	<u>inel 1</u>			<u>Chan</u>	<u>inel 1</u>			<u>Chan</u>	<u>nel 1</u>		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u> <u>-3</u>				<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			
<u>SCH_Ec/Ior</u> <u>SCH_t_{offset}</u>	<u>dB</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u> 5	<u>-9</u> 5	<u>-9</u> 5	<u>-9</u> 5	<u>-9</u> 10	<u>-9</u> 10	<u>-9</u> 10	<u>-9</u> 10	
<u>PICH_Ec/Ior</u>	dB	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				<u> </u>	<u> </u>	-3	<u>-3</u>	<u>10</u>	<u>10</u>	-3	-3	
OCNS_Ec/lor	dB	-4,28					<u>-4,28</u>	-4,28	-4,28	<u>-4,28</u>	<u>-4,28</u>	-4,28	-4,28	
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	
<u>PCCPCH RSCP</u>	<u>dBm</u>	<u>-64</u>	<u>-66</u>			<u>-66</u>	<u>-64</u>			<u>-74</u>	<u>-74</u>			
<u>Qoffset1_{s,n}</u>	<u>dB</u>		C1, C5:0	C3:0; C ; C1,C6:			<u>C2, C5: 0</u>	C3:0; C2:C6:			<u>1: 0; C3,</u> C3, C5: 0	; <u>C3:C6:</u>		
<u>Qhyst1</u> <u>s</u>	<u>dB</u>		_	<u>0</u>			_	<u>0</u>			_	<u>0</u>		
Treselection	<u>s</u>		<u>(</u>	<u>)</u>			<u>(</u>	<u>0</u>		<u>0</u>				
Sintrasearch	<u>dB</u>		<u>not</u>	<u>sent</u>			<u>not</u>	<u>sent</u>			<u>not</u>	<u>sent</u>		
			Ce	<u>ll 4</u>			Ce	<u>II 5</u>			Ce	<u>ll 6</u>		
<u>Timeslot</u>		<u>(</u>	<u>)</u>	<u>8</u>	<u> 8</u>	<u>0</u> <u>8</u>				<u>0</u> <u>8</u>			<u>8</u>	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u> <u>T2</u> <u>T1</u> <u>T2</u>			<u>T2</u>	<u>T1</u> <u>T2</u> <u>T1</u> <u>T2</u>				
<u>UTRA RF Channel</u> Number			Chan	inel 1			Chan	nel 1	<u> </u>		Chan	<u>nel 1</u>		
<u>PCCPCH_Ec/Ior</u>	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			
<u>SCH_Ec/lor</u>	<u>dB</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	
<u>SCH t_{offset} PICH Ec/Ior</u>	<u>dB</u>	<u>15</u>	<u>15</u>	<u>15</u> -3	<u>15</u> <u>-3</u>	<u>20</u>	<u>20</u>	<u>20</u> -3	<u>20</u> -3	<u>25</u>	<u>25</u>	<u>25</u> -3	<u>25</u> -3	
<u>OCNS Ec/Ior</u>	<u>dB</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	
<u>PCCPCH RSCP</u>	<u>dBm</u>	<u>-74</u>	<u>-74</u>			<u>-74</u>	<u>-74</u>			<u>-74</u>	<u>-74</u>			
<u>Qoffset1_{s.n}</u>	<u>dB</u>			<u>C4, C2:</u> C5:0; C4:				<u>C2:0; C</u> ; ; C5:C6:			1: 0; C6, C6, C4:0:			
<u>Qhyst1_s</u>	<u>dB</u>			<u>)</u>				<u>)</u>	_		<u>(</u>			
Treselection	<u>s</u>		<u>(</u>	<u>0</u>		<u>0</u>				<u>0</u>				
Sintrasearch	<u>dB</u>		not	<u>sent</u>		not sent				not sent				

	<u>dBm/3,</u> <u>84</u> <u>MHz</u>	<u>-70</u>
Propagation Condition		AWGN

A5.5.1.1.2 for 1.28Mcps TDD option

<u>(void)</u>

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:

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

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

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

A5.5.1.2.2 for 1.28Mcps TDD option

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.5.3 and A.5.4.

Table A.5.3: General test parameters for Cell Re-selection in Multi carrier case

	Parameter Parameter	<u>Unit</u>	<u>Value</u>	Comment
Initial	Active cell		Cell1	
<u>condition</u>	Neighbour cells		Cell2, Cell3,Cell4,	
			<u>Cell5, Cell6</u>	
<u>Final</u>	Active cell		<u>Cell2</u>	
condition				
	<u>HCS</u>		Not used	
<u>UE TX</u>	<u>PWR MAX RACH</u>	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in the test.
	<u>Qrxlevmin</u>	<u>dBm</u>	<u>-102</u>	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
<u>- P</u>	ersistence value		<u>1</u>	by the random access procedure. The value
				shall be used for all cells in the test.
	<u>Tsi</u>	<u>S</u>	<u>1.28</u>	The value shall be used for all cells in the test.
DF	DRX cycle length		<u>1.28</u>	The value shall be used for all cells in the test.
	<u></u> <u>T1</u>		<u>30</u>	
	<u>T2</u>	<u>s</u>	<u>15</u>	

	Table A.5.4: Cell re-selection multi carrier multi cell case													
Parameter	<u>Unit</u>		<u>Ce</u>	<u>ll 1</u>			<u>Ce</u>	<u>ll 2</u>		<u>Cell 3</u>				
<u>Timesiot Num</u>	<u>ber</u>	<u>(</u>	<u>)</u>	1	<u>8</u>		<u>0</u>		3	<u>0</u>		1	<u>8</u>	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
<u>UTRA RF Char</u> <u>Number</u>	<u>nnel</u>		Chan	nnel 1			Char	<u>mel 2</u>			Char	mel 1		
<u>PCCPCH_Ec/</u> SCH_Ec/Io		<u>-3</u> -9	<u>-3</u> -9	-9	-9	<u>-3</u> -9	<u>-3</u> -9	-9	-9	<u>-3</u> -9	<u>-3</u> -9	-9	-9	
<u>SCH_t_{offset}</u>		<u>0</u>	<u>0</u>	0	0	5	5	<u>5</u>	5	<u>10</u>	<u>10</u>	10	<u>10</u>	
<u>PICH_Ec/Io</u>				<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>	
$\frac{OCNS_Ec/Ic}{\hat{\iota}}$		<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>3</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	
PCCPCH RS	<u>CP</u> <u>dBm</u>	<u>-70</u>	<u>-73</u>			<u>-73</u>	<u>-70</u>			<u>-76</u>	<u>-76</u>			
<u>Qoffset1_{s,n}</u>	dB			<u>C1, C3:</u> C5:0; C1:				<u>C2, C3:</u> C5:0; C2:		<u>C3, C1: 0; C3, C2:0; C3,C4:0</u> <u>C3, C5:0; C3:C6:0</u>				
<u>Qhyst1_s</u>	<u>dB</u>		<u>(</u>	<u>0</u>			<u>(</u>	<u>)</u>			<u>(</u>	<u>C</u>		
Treselection	<u>1 S</u>		<u>(</u>	<u>0</u>		<u>0</u>				<u>0</u>				
Sintrasearch	<u>n</u> <u>dB</u>		not	<u>sent</u>		not sent				<u>not sent</u>				
Sintersearch	<u>n dB</u>		not	<u>sent</u>			<u>not</u>	<u>sent</u>		<u>not sent</u>				

			Ce	<u>ll 4</u>			Ce	<u>II 5</u>		<u>Cell 6</u>			
<u>Timeslot</u>		<u>(</u>	2	1	<u>8</u>		<u>)</u>	<u>8</u>		<u>0</u>		<u>8</u>	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel</u> <u>Number</u>			Chan	inel 1			<u>Char</u>	nnel 2			<u>Char</u>	inel 2	
<u>PCCPCH_Ec/Ior</u>	dB	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>		
<u>SCH_Ec/Ior</u> <u>SCH_t_{offset}</u>	<u>dB</u>	<u>-9</u> 15	<u>-9</u> 15	<u>-9</u> 15	<u>-9</u> 15	<u>-9</u> 20	<u>-9</u> 20	<u>-9</u> 20	<u>-9</u> 20	<u>-9</u> 25	<u>-9</u> 25	<u>-9</u> 25	<u>-9</u> <u>25</u>
PICH_Ec/Ior	dB	<u>15</u>	<u>15</u>	-3	-3	20	20	-3	<u>-3</u>	<u>23</u>	23	-3	<u>-3</u>
OCNS_Ec/Ior	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>
PCCPCH RSCP	<u>dBm</u>	<u>-76</u>	<u>-76</u>			<u>-76</u>	<u>-76</u>			<u>-76</u>	<u>-76</u>		
<u>Qoffset1_{s,n}</u>	<u>dB</u>			C2:0; C4; C4:C6:				C2:0; C3; C5:C6:0		<u>C6, C1: 0; C6, C2:0; C6,C3:0</u> <u>C6, C4:0; C6:C5:0</u>			
<u>Qhyst1_s</u>	<u>dB</u>		<u>(</u>	<u>)</u>		<u>0</u>				<u>0</u>			
Treselection	<u>8</u>		<u>(</u>	<u>)</u>			<u> </u>	<u>0</u>			<u>(</u>	<u>)</u>	
Sintrasearch	<u>dB</u>		<u>not</u>	<u>sent</u>			<u>not</u>	<u>sent</u>			<u>not</u>	<u>sent</u>	
Sintersearch	<u>dB</u>		not	<u>sent</u>			not	<u>sent</u>			<u>not</u>	<u>sent</u>	
I _{oc}	<u>dBm/3,</u> <u>84</u> <u>MHz</u>							<u>70</u>					
Propagation Condition							AW	/ <u>GN</u>					

A.5.5.2.1.2 for 1.28Mcps TDD option

<u>(void)</u>

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:

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

<u>T</u> 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.
$\underline{\mathbf{T}}_{SI}$	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 tot	al of 7.68 s, allow 8s in the 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)

A.5.6 Cell Re-selection in URA_PCH

NOTE: Requirements for cell re selection in URA_PCH state are the same as for cell re selection in idle mode, therefore no seperate test cases are required.

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 5.5.2. This scenario implies the presence of 1 carrier and 6 cells as given in Table A.5.5 and A.5.6. Cell1 and Cell2 shall belong to different UTRAN Registration Areas (URA).

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

F	Parameter		Value	Comment
<u>Initial</u>	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3, Cell4,	
			Cell5, Cell6	
<u>Final</u>	Active cell		Cell2	
condition				
	<u>HCS</u>		Not used	
<u>UE TXP</u>	WR MAX RACH	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in the test.
	<u>Qrxlevmin</u>	<u>dBm</u>	<u>-102</u>	The value shall be used for all cells in the test.
Access Se	rvice Class (ASC#0)			Selected so that no additional delay is caused by
<u>- Pe</u>	rsistence value		<u>1</u>	the random access procedure. The value shall be
				used for all cells in the test.
	\underline{T}_{SI}	<u>S</u>	<u>1.28</u>	The value shall be used for all cells in the test.
DR	DRX cycle length		<u>1.28</u>	The value shall be used for all cells in the test.
	<u>T1</u>	<u>s</u>	<u>15</u>	
	<u>T2</u>	<u>s</u>	<u>15</u>	

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

<u>Parameter</u>	<u>Unit</u>	<u>Cell 1</u>					<u>Ce</u>	<u>ll 2</u>		<u>Cell 3</u>			
<u>Timeslot Number</u>		<u>(</u>	<u>0</u> <u>8</u>			<u> </u>	<u>)</u>	1	<u>8</u>	<u>0</u> <u>8</u>			<u> 8</u>
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel</u> Number			<u>Chan</u>	<u>inel 1</u>			<u>Char</u>	<u>inel 1</u>			<u>Chan</u>	<u>nel 1</u>	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>		
<u>SCH_Ec/Ior</u> <u>SCH_t_{offset}</u>	<u>dB</u>	<u>-9</u> 0	<u>-9</u> 0	<u>-9</u> 0	<u>-9</u> 0	<u>-9</u> 5	<u>-9</u> 5	<u>-9</u> 5	<u>-9</u> 5	<u>-9</u> 10	<u>-9</u> 10	<u>-9</u> 10	<u>-9</u> 10
PICH_Ec/Ior	dB	<u>U</u>	<u>U</u>	<u>-3</u>	<u>-3</u>	<u> </u>	<u> </u>	<u>-3</u>	<u>-3</u>	<u>10</u>	<u>10</u>	-3	<u>-3</u>
OCNS_Ec/Ior	dB	<u>-4,28</u>	<u>-4,28</u>	-4,28	-4,28	<u>-4,28</u>	<u>-4,28</u>	-4,28	-4,28	<u>-4,28</u>	<u>-4,28</u>	-4,28	-4,28
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>
PCCPCH RSCP	<u>dBm</u>	<u>-64</u>	<u>-66</u>			<u>-66</u>	<u>-64</u>			<u>-74</u>	<u>-74</u>		
Qoffset1 _{s,n}	<u>dB</u>			C3:0; C ; C1,C6:				C3:0; C2:C6:			<u>1: 0; C3,</u> C3, C5: 0		
<u>Qhyst1</u> _s	<u>dB</u>		_	<u>0</u>			_	<u>0</u>		<u>0</u>			
Treselection	<u>s</u>		<u>(</u>	<u>)</u>		<u>0</u>				<u>0</u>			
<u>Sintrasearch</u>	<u>dB</u>		not	<u>sent</u>			not sent			<u>not sent</u>			
		<u>Cell 4</u>					<u>Ce</u>	<u>II 5</u>		<u>Cell 6</u>			
		<u>0</u> <u>8</u>											
<u>Timeslot</u>		<u>(</u>	<u>)</u>	1	<u>8</u>	<u>(</u>	<u>)</u>	1	<u>8</u>	<u> </u>	<u>)</u>	<u>8</u>	3
<u>Timeslot</u>		<u>(</u> <u>T1</u>	<u>)</u> <u>T2</u>	<u>1</u>	<u>3</u> <u>T2</u>	<u>9</u> <u>T1</u>	<u>)</u> <u>T2</u>	<u>1</u>	<u>8</u> <u>T2</u>	<u>9</u> <u>T1</u>	<u>)</u> <u>T2</u>	<u>1</u>	<u>3</u> <u>T2</u>
UTRA RF Channel				<u>T1</u>			<u>T2</u>					<u>T1</u>	
<u>UTRA RF Channel</u> <u>Number</u> <u>PCCPCH Ec/Ior</u>	<u>dB</u>	<u>T1</u>	<u>T2</u> Chan	<u>T1</u> mel 1	<u>T2</u>	<u>T1</u>	<u>T2</u> Char	<u>T1</u> mel 1	<u>T2</u>	<u>T1</u>	<u>T2</u> <u>Chan</u>	<u>T1</u> nel 1	<u>T2</u>
<u>UTRA RF Channel</u> <u>Number</u> <u>PCCPCH Ec/Ior</u> <u>SCH_Ec/Ior</u>	<u>dB</u> <u>dB</u>	<u>T1</u> - <u>3</u> - <u>9</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u>	<u>T1</u> mel 1	<u>T2</u>	<u>T1</u> - <u>3</u> - <u>9</u>	<u>T2</u> <u>Char</u> <u>-3</u> <u>-9</u>	<u>T1</u> nel 1	<u>T2</u>	<u>T1</u> - <u>3</u> - <u>9</u>	<u>T2</u> Chan	<u>T1</u> nel 1	<u>T2</u>
<u>UTRA RF Channel</u> <u>Number</u> <u>PCCPCH Ec/Ior</u>		<u>T1</u>	<u>T2</u> Chan	<u>T1</u> mel 1	<u>T2</u>	<u>T1</u>	<u>T2</u> Char	<u>T1</u> mel 1	<u>T2</u>	<u>T1</u>	<u>T2</u> <u>Chan</u>	<u>T1</u> nel 1	<u>T2</u>
UTRA RF Channel Number <u>PCCPCH Ec/Ior</u> <u>SCH Ec/Ior</u> <u>SCH t_{offset} <u>PICH Ec/Ior</u> <u>OCNS Ec/Ior</u></u>	<u>dB</u>	<u>T1</u> - <u>3</u> - <u>9</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u>	<u>T1</u> mel 1 <u>-9</u> <u>15</u>	<u>T2</u> -9 15	<u>T1</u> - <u>3</u> - <u>9</u>	<u>T2</u> <u>Char</u> <u>-3</u> <u>-9</u>	<u>T1</u> mel 1 <u>-9</u> <u>20</u>	<u>T2</u> -9 20	<u>T1</u> - <u>3</u> - <u>9</u>	<u>T2</u> Chan	<u>T1</u> nel 1 <u>-9</u> <u>25</u>	<u>T2</u> <u>-9</u> <u>25</u>
<u>UTRA RF Channel</u> <u>Number</u> <u>PCCPCH Ec/Ior</u> <u>SCH Ec/Ior</u> <u>SCH t_{offset} <u>PICH Ec/Ior</u></u>	<u>dB</u> <u>dB</u>	<u>-3</u> -9 15	<u>T2</u> Chan <u>-3</u> <u>-9</u> <u>15</u>	<u>T1</u> mel 1 <u>-9</u> <u>15</u> <u>-3</u>	<u>T2</u> <u>-9</u> <u>15</u> <u>-3</u>	<u>-3</u> -9 20	<u>T2</u> Char <u>-3</u> <u>-9</u> <u>20</u>	<u>T1</u> mel 1 <u>-9</u> <u>20</u> <u>-3</u>	<u>T2</u> -9 20 -3	<u>T1</u> <u>-3</u> <u>-9</u> <u>25</u>	<u>T2</u> Chan <u>-3</u> <u>-9</u> <u>25</u>	<u>T1</u> nel 1 <u>-9</u> <u>25</u> <u>-3</u>	<u>-9</u> <u>-3</u>
UTRA RF Channel Number <u>PCCPCH Ec/Ior</u> <u>SCH Ec/Ior</u> <u>SCH t_{offset} <u>PICH Ec/Ior</u> <u>OCNS Ec/Ior</u></u>	<u>dB</u> <u>dB</u> <u>dB</u>	<u>-3</u> -9 15 -4.28	<u>T2</u> Chan <u>-3</u> <u>-9</u> <u>15</u> <u>-4,28</u>	<u>T1</u> mel 1 -9 <u>15</u> -3 -4,28	<u>-9</u> <u>15</u> <u>-3</u> <u>-4,28</u>	<u>-3</u> -9 20 -4.28	<u>T2</u> Char - <u>3</u> - <u>9</u> 20 - <u>4,28</u>	<u>T1</u> mel 1 -9 20 -3 -4.28	<u>-9</u> <u>20</u> <u>-3</u> <u>-4.28</u>	<u>-3</u> -9 25 -4.28	<u>T2</u> Chan <u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u>	<u>T1</u> mel 1 -9 25 -3 -4,28	<u>-9</u> <u>25</u> <u>-3</u> <u>-4,28</u>
$\frac{UTRA RF Channel}{Number}$ $\frac{PCCPCH Ec/lor}{SCH Ec/lor}$ $\frac{SCH L_{offset}}{PICH Ec/lor}$ $\frac{OCNS Ec/lor}{\hat{I}_{cr}/I_{oc}}$	<u>dB</u> <u>dB</u> <u>dB</u> <u>dB</u>	<u>-3</u> <u>-9</u> <u>15</u> <u>-4.28</u> <u>-1</u> <u>-74</u>	T2 Chan -3 -9 15 -4.28 -1 -74 4, C1: 0;	<u>T1</u> nel 1 <u>-9</u> <u>15</u> <u>-3</u> <u>-4.28</u> <u>-1</u> C4, C2:	<u>-9</u> <u>15</u> <u>-3</u> <u>-4.28</u> <u>-1</u> <u>0;</u>	<u>T1</u> <u>-3</u> <u>-9</u> <u>20</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>C5, C</u>	<u>T2</u> <u>Char</u> <u>-3</u> <u>-9</u> <u>20</u> <u>-4,28</u> <u>-1</u> <u>-74</u> 1: 0; C5,	<u>T1</u> nel 1 <u>-9</u> <u>20</u> <u>-3</u> <u>-4.28</u> <u>-1</u> C2:0; C	<u>-9</u> <u>20</u> <u>-3</u> <u>-4.28</u> <u>-1</u> 5,C3:0	<u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>C6, C</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u> <u>-1</u> <u>-74</u> 1: 0; C6,	<u>T1</u> nel 1 <u>-9</u> <u>25</u> <u>-3</u> <u>-4.28</u> <u>-1</u> C2:0; C4	<u>-9</u> <u>25</u> -3 <u>-4.28</u> - <u>1</u> 5.C3:0
$\frac{UTRA RF Channel}{Number}$ $\frac{PCCPCH Ec/lor}{SCH Ec/lor}$ $\frac{SCH Loffset}{PICH Ec/lor}$ $\frac{OCNS Ec/lor}{\hat{l}_{cr}/l_{oc}}$ $\frac{PCCPCH RSCP}{PCCPCH RSCP}$	<u>dB</u> <u>dB</u> <u>dB</u> <u>dB</u>	<u>-3</u> <u>-9</u> <u>15</u> <u>-4.28</u> <u>-1</u> <u>-74</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u> <u>15</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>4, C1: 0;</u> <u>3:0C4, C</u>	<u>T1</u> mel 1 <u>-9</u> <u>15</u> <u>-3</u> <u>-4,28</u> <u>-1</u>	<u>-9</u> <u>15</u> <u>-3</u> <u>-4.28</u> <u>-1</u> <u>0;</u>	<u>T1</u> <u>-3</u> <u>-9</u> <u>20</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>C5, C</u>	<u>T2</u> <u>Char</u> <u>-3</u> <u>-9</u> <u>20</u> <u>-4,28</u> <u>-1</u> <u>-74</u> 1: 0; C5, C5, C4:0	<u>T1</u> nel 1 <u>-9</u> <u>20</u> <u>-3</u> <u>-4,28</u> <u>-1</u>	<u>-9</u> <u>20</u> <u>-3</u> <u>-4.28</u> <u>-1</u> 5,C3:0	<u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>C6, C</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u> <u>-1</u> <u>-74</u> 1: 0; C6, <u>C6, C4:0</u>	<u>T1</u> nel 1 <u>-9</u> <u>25</u> <u>-3</u> <u>-4.28</u> <u>-1</u> C2:0; C4	<u>-9</u> <u>25</u> -3 <u>-4.28</u> - <u>1</u> 5.C3:0
$\frac{UTRA RF Channel}{Number}$ $\frac{PCCPCH Ec/lor}{SCH Ec/lor}$ $\frac{SCH L_{offset}}{PICH Ec/lor}$ $\frac{OCNS Ec/lor}{\hat{I}_{dr}/I_{oc}}$ $\frac{PCCPCH RSCP}{Qoffset1_{s,n}}$	<u>dB</u> <u>dB</u> <u>dB</u> <u>dBm</u> <u>dBm</u>	<u>-3</u> <u>-9</u> <u>15</u> <u>-4.28</u> <u>-1</u> <u>-74</u>	$ \underline{T2} \underline{Chan} \underline{-3} \underline{-9} \underline{15} \underline{-4,28} \underline{-1} \underline{-74} \underline{4, C1: 0;} \underline{3:0C4, C} \underline{9} \underline{1} 1$	<u>T1</u> nel 1 -9 <u>15</u> -3 -4,28 -1 -1 C4, C2: C5:0; C4:	<u>-9</u> <u>15</u> <u>-3</u> <u>-4.28</u> <u>-1</u> <u>0;</u>	<u>T1</u> <u>-3</u> <u>-9</u> <u>20</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>C5, C</u>	$ \underline{T2} \underline{Char} \underline{-3} \underline{-9} \underline{20} \underline{-4.28} \underline{-1} \underline{-74} \underline{1:0;C5,C4:0} \underline{0} $	<u>T1</u> nel 1 <u>-9</u> <u>20</u> <u>-3</u> <u>-4,28</u> <u>-1</u> <u>C2:0; C</u> ; <u>C5:C6:</u>	<u>-9</u> <u>20</u> <u>-3</u> <u>-4.28</u> <u>-1</u> 5,C3:0	<u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u> <u>-1</u> <u>-74</u> <u>C6, C</u>	<u>T2</u> <u>Chan</u> <u>-3</u> <u>-9</u> <u>25</u> <u>-4,28</u> <u>-1</u> <u>-74</u> 1: 0; C6, <u>C6, C4:0</u>	T1 nel 1 -9 25 -3 -4,28 -1 C2:0; C0 ; C6:C5:(<u>-9</u> <u>25</u> -3 <u>-4.28</u> - <u>1</u> 5.C3:0

1	<u>oc</u> <u>dBm/3,</u> <u>84</u> <u>MHz</u>	<u>-70</u>
Propa Con	agation dition	AWGN

A.5.6.1.1.2 for 1.28Mcps TDD option

<u>(void)</u>

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 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:

A.5.6.1.2.2 for 1.28Mcps TDD option

(void)

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

A.5.6.2.1 Test Purpose and Environment

A.5.6.2.1.1 for 3.84Mcps TDD option

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

	Parameter	<u>Unit</u>	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4,	
			<u>Cell5, Cell6</u>	
<u>Final</u>	Active cell		<u>Cell2</u>	
condition				
	<u>HCS</u>		Not used	
<u>UE_</u> TX	<u>PWR_MAX_RACH</u>	<u>dBm</u>	<u>21</u>	The value shall be used for all cells in the test.
	<u>Qrxlevmin</u>	<u>dBm</u>	<u>-102</u>	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
<u>- P</u>	<u>ersistence value</u>		<u>1</u>	by the random access procedure. The value
				shall be used for all cells in the test.
	<u>T_{SI}</u>	<u>S</u>	<u>1.28</u>	The value shall be used for all cells in the test.
DI	RX cycle length	<u>S</u>	<u>1.28</u>	The value shall be used for all cells in the test.
	<u>T1</u>	<u>S</u>	<u>30</u>	
	<u>T2</u>	<u>S</u>	<u>15</u>	

	Table A.5.4: Cell re-selection multi carrier multi cell case												
Parameter	<u>Unit</u>		<u>Ce</u>	<u>ll 1</u>			<u>Cell 2</u>			<u>Cell 3</u>			
<u>Timesiot Num</u>	<u>ber</u>	<u>(</u>	<u>)</u>	1	<u>8</u>	9	<u>)</u>	<u>8</u>	3	9	<u>)</u>	1	<u>8</u>
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Char</u> <u>Number</u>	<u>nnel</u>		Channel 1				Char	<u>mel 2</u>		Channel 1			
<u>PCCPCH_Ec/</u> SCH_Ec/Io		<u>-3</u> -9	<u>-3</u> -9	-9	-9	<u>-3</u> -9	<u>-3</u> -9	-9	-9	<u>-3</u> -9	<u>-3</u> -9	-9	-9
<u>SCH_t_{offset}</u>		<u>0</u>	<u>0</u>	0	0	5	5	<u>5</u>	5	<u>10</u>	<u>10</u>	10	<u>10</u>
<u>PICH_Ec/Io</u>				<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>
$\frac{OCNS_Ec/Ic}{\hat{\iota}}$		<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>3</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>
PCCPCH RS	<u>CP</u> <u>dBm</u>	<u>-70</u>	<u>-73</u>			<u>-73</u>	<u>-70</u>			<u>-76</u>	<u>-76</u>		
<u>Qoffset1_{s,n}</u>	dB			<u>C1, C3:</u> C5:0; C1:		<u>C2, C1: 0; C2, C3:0;</u> <u>C2,C4:0C2, C5:0; C2:C6:0</u>				<u>C3, C1: 0; C3, C2:0; C3,C4:0</u> <u>C3, C5:0; C3:C6:0</u>			
<u>Qhyst1_s</u>	<u>dB</u>		<u>(</u>	<u>0</u>			<u>(</u>	<u>)</u>		<u>0</u>			
Treselection	<u>1 S</u>		<u>0</u>				<u>0</u>			<u>0</u>			
Sintrasearch	<u>n</u> <u>dB</u>		not sent				<u>not sent</u>			<u>not sent</u>			
Sintersearch	<u>n dB</u>		not	<u>sent</u>			<u>not</u>	<u>sent</u>		not sent			

			<u>Ce</u>	<u>ll 4</u>		<u>Cell 5</u>				<u>Cell 6</u>			
<u>Timeslot</u>		<u>(</u>	<u>0</u> <u>8</u>		9	<u>0</u>		<u>8</u>		<u>0</u>		<u>8</u>	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel</u> <u>Number</u>			<u>Chan</u>	inel 1			<u>Char</u>	inel 2			<u>Char</u>	<u>inel 2</u>	
<u>PCCPCH_Ec/Ior</u>	dB	<u>-3</u>	<u>-3</u>	0		<u>-3</u>	<u>-3</u>	0	0	<u>-3</u>	<u>-3</u>	0	
<u>SCH_Ec/Ior</u> <u>SCH_t_{offset}</u>	<u>dB</u>	<u>-9</u> 15	<u>-9</u> 15	<u>-9</u> 15	<u>-9</u> 15	<u>-9</u> 20	<u>-9</u> 20	<u>-9</u> 20	<u>-9</u> 20	<u>-9</u> 25	<u>-9</u> 25	<u>-9</u> 25	<u>-9</u> <u>25</u>
PICH Ec/Ior	dB	<u>15</u>	<u>15</u>	-3	-3	20	20	-3	-3	<u>25</u>	<u>25</u>	-3	<u>-3</u>
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>	<u>-3</u>
PCCPCH RSCP	<u>dBm</u>	<u>-76</u>	<u>-76</u>			<u>-76</u>	<u>-76</u>			<u>-76</u>	<u>-76</u>		
<u>Qoffset1_{s,n}</u>	<u>dB</u>			C2:0; C4; C4:C6:		<u>C5, C1: 0; C5, C2:0; C5,C3:0</u> <u>C5, C4:0; C5:C6:0</u>			<u>C6, C1: 0; C6, C2:0; C6,C3:0</u> <u>C6, C4:0; C6:C5:0</u>				
<u>Qhyst1_s</u>	<u>dB</u>		<u>(</u>	<u>)</u>		<u>0</u>			<u>0</u>				
Treselection	<u>s</u>		<u>(</u>	<u>)</u>		<u>0</u>				<u>0</u>			
Sintrasearch	<u>dB</u>		<u>not sent</u>				<u>not sent</u>			<u>not sent</u>			
Sintersearch	<u>dB</u>	not sent				<u>not sent</u>				<u>not sent</u>			
I _{oc}	<u>dBm/3,</u> <u>84</u> <u>MHz</u>						<u></u>	<u>70</u>					
Propagation Condition							AW	<u>'GN</u>					

A.5.6.2.1.2 for 1.28Mcps TDD option

<u>(void)</u>

A.5.6.2.2 Test Requirements

A.5.6.2.2.1 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:

<u>The cell re-selection delay can be expressed as: $T_{\underline{evaluateTDD}} + T_{\underline{SL}}$ where:</u>

<u>T</u> 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.
\underline{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 tot	al of 7.68 s. allow 8s in the test case.

A.5.6.2.2.2 for 1.28Mcps TDD option

<u>(void)</u>

3GPP TSG RAN WG4 Meeting #19

R4-011093

Edinburgh, Great Britain, 3rd - 7th September 2001

	CHANGE REQUEST	orm-v4							
¥	S25.123 CR 94 # ev _ # Current version: 3.6.0 #								
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 Radio Access Network X Core Network									
Title:	Transport Channel BER accuracy requirement								
Source:	RAN WG4								
Work item code:	ይ Date:)1							
Category:	F Release: # Rel99 Use one of the following categories: Use one of the following releases F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can be found in 3GPP TR 21.900. REL-5 (Release 5)	S:							
Reason for chan	e: # There is one incorrect table reference in the accuracy requirement clause.								
Summary of cha	ge: # Correct the table reference in the accuracy requirement clause.								
Consequences if not approved:	X The accuracy requirement will be ambiguous.								
Clauses affected	¥ 9.2.1.5.1								
Other specs affected:	% Other core specifications % Test specifications 0&M Specifications								
Other comments	¥								

How to create CRs using this form:

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

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

9.2.1.5.1 Accuracy requirement

The average of consecutive Transport channel BER measurements is required to fulfil the accuracy stated in table 9.399-48 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 table 9.39.

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

3GPP TSG RAN WG4 Meeting #19

R4-011095

Edinburgh, Great Britain, 3rd - 7th September 2001

	CR-Form-v4								
ж <mark>т</mark>	S25.123 CR 95 # ev _ # Current version: 4.1.0 #								
For <u>HELP</u> on t	For HELP on using this form, see bottom of this page or look at the pop-up text over the # symbols.								
Proposed change	Proposed change affects: # (U)SIM ME/UE Radio Access Network X Core Network								
Title: भ	Transport Channel BER accuracy requirement								
Source: ೫	RAN WG4								
Work item code:೫	Date: # 3 September 2001								
Category: ₩	Release: % Rel-4 Use one of the following categories: Use one of the following releases: F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can be found in 3GPP TR 21.900. REL-5 (Release 5)								
Reason for chang	e: # There is one incorrect table reference in the accuracy requirement clause.								
Summary of chan	ge: # Correct the table reference in the accuracy requirement clause.								
Consequences if not approved:	# The accuracy requirement will be ambiguous.								
Clauses affected:	¥ 9.2.1.5.1								
Other specs affected:	% Other core specifications % Test specifications 0&M Specifications								
Other comments:	ж								

How to create CRs using this form:

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

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

9.2.1.5.1 Accuracy requirement

The average of consecutive Transport channel BER measurements is required to fulfil the accuracy stated in table 9.399-48 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 table 9.39.

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

3GPP TSG RAN WG4 Meeting #19

R4-011097

Edinburgh, Great Britain, 3rd - 7th September 2001

	CR-Form-v4									
CHANGE REQUEST										
¥	25.123 CR 96 # ev _ # Current version: 3.6.0 #									
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: ೫	Success Rates in Test Cases									
Source: #	RAN WG4									
Work item code: ℜ	Date: 第 2001-09-03									
Category: ⊮	FRelease: %Rel99Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D (editorial modification)R99D tealled explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5									
Reason for change	: # The success rates of the tests are not given in the test cases in Annex A.									
Summary of chang	Success rates are included into the test cases. The success rate of 90 % is used in all test cases for AWGN propoagation condition.									
Consequences if not approved:	H The success rates of the tests are derived based on the general requirements of TS25.123 and the behaviour of the used radio propagation condition. If these success rates are missing, it might be difficult for T1 RF to find out the correct success rate for each test.									
Clauses affected:	<mark>⁸ A.4.2.1.2, A.4.2.2.2, A.4.2.3.2, A.4.2.4.2, A.8.1.1.2, A.8.2.1.2, A.8.3.1.2</mark>									
Other specs affected:	Image: Second system Image: Second system Image: Second									
Other comments:	¥									

How to create CRs using this form:

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

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

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

Annex A (normative): Test Cases

A.1 Purpose of Annex

This Annex specifies test specific parameters for some of the functional requirements in chapters 4 to 9. The tests provide additional information to how the requirements should be interpreted for the purpose of conformance testing. The tests in this Annex are described such that one functional requirement may be tested in one or several test and one test may verify several requirements. Some requirements may lack a test.

The conformance tests are specified in TS34.122. Statistical interpretation of the requirements is described in Annex A.2.

A.2 Requirement classification for statistical testing

Requirements in this specification are either expressed as absolute requirements with a single value stating the requirement, or expressed as a success rate. There are no provisions for the statistical variations that will occur when the parameter is tested.

Annex A outlines the test in more detail and lists the test parameters needed. The test will result in an outcome of a test variable value for the DUT inside or outside the test limit. Overall, the probability of a "good" DUT being inside the test limit(s) and the probability of a "bad" DUT being outside the test limit(s) should be as high as possible. For this reason, when selecting the test variable and the test limit(s), the statistical nature of the test is accounted for.

The statistical nature depends on the type of requirement. Some have large statistical variations, while others are not statistical in nature at all. When testing a parameter with a statistical nature, a confidence level is set. This establishes the probability that a DUT passing the test actually meets the requirement and determines how many times a test has to be repeated and what the pass and fail criteria are. Those aspects are not covered by TS 25.123. The details of the tests, how many times to run it and how to establish confidence in the tests are described in TS 34.122. This Annex establishes what the test variable is and whether it can be viewed as statistical in nature or not.

A.2.1 Types of requirements in TS 25.123

A.2.1.1 Time and delay requirements on UE higher layer actions

One part of the RRM requirements are delay requirements:

In idle mode (A.4) there is cell selection delay and cell re-selection delay.

In UTRAN Connected Mode Mobility (A.5) there is measurement reporting delay and cell re-selection delay.

All have in common that the UE is required to perform an action observable in higher layers (e.g. camp on the correct cell) within a certain time after a specific event (e.g. a new strong pilot arises). The delay time is statistical in nature for several reasons, among others that measurements required by the UE are performed in a fading radio environment.

The variations make a strict limit unsuitable for a test. Instead there is a condition set for a correct action by the UE, e.g. that the UE shall camp on the correct cell within X seconds. Then the rate of correct events is observed during repeated tests and a limit is set on the rate of correct events, usually 90% correct events are required. How the limit is applied in the test depends on the confidence required, further detailed are in TS 34.122.

A.2.1.2 Measurements of power levels, relative powers and time

A very large number of requirements are on measurements that the UE performs:

In UTRAN Connected Mode Mobility (A.5) there are measurement reports.

Measurement performance requirements (A.8) has requirements on all type of measurements.

The accuracy requirements on measurements are expressed in this specification as a fixed limit (e.g. +/-X dB), but the measurement error will have a distribution that is not easily confined in fixed limits. Assuming a Gaussian distribution of the error, the limits will have to be set at +/-3,29 σ if the probability of failing a "good DUT" in a single test is to be kept at 0,1%. It is more reasonable to set the limit tighter and test the DUT by counting the rate of measurements that are within he limits, in a way similar to the requirements on delay.

A.2.1.3 Implementation requirements

A few requirements are strict actions the UE should take or capabilities the UE should have, without any allowance for deviations. These requirements are absolute and should be tested as such. Examples are

"Event triggered report rate" in UTRAN Connected Mode Mobility (A.5)

A.2.1.4 Physical layer timing requirements

All requirements on "Timing Characteristics" (A.7) are absolute limits on timing accuracy.

A.2.1.5 BER and BLER requirements

Some measurement report procedures in "UE Measurement procedures" (A.8) have requirements on DCH BLER. These are tested in the same way as BLER requirements in TS 25.102.

A.3 Reserved for Future Use

(void)

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

F	Parameter	Unit	Value	Comment
Initial Active cell condition Neighbour cells			Cell1	
			Cell2, Cell3,Cell4, Cell5, Cell6	
Final Active cell condition			Cell2	
	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.
DRX cycle length		S	1.28	The value shall be used for all cells in the test.
	T1		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	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\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		
Qoffset		0		0		0		0		0		0	
Qhyst		0		0		0		0		0		0	
Treselection	s	()	õ		0		0		Ő		Ő	
Sintrasearch	dB				sent not sent			not sent		not sent		not sent	
Timeslot		0 8		0 8			0		8				
		T1	T2	T1	T2	T1	T2 T1 T2		T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nel 1		Channel 1			Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
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	4.00	4.00	-3	-3	4.00	4.00	-3	-3	4.00	4.00	-3	-3
$\frac{\text{OCNS}}{\hat{I}_{or}/I_{oc}}$	dB dB	-4,28 -1	-4,28 -1	-4,28 -1	-4,28 -1	-4,28 -1	-4,28 -1	-4,28 -1	-4,28 -1	-4,28 -1	-4,28 -1	-4,28 -1	-4,28 -1
I or / I oc	UD	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset		Ô Ô			0 0				0	0			
Qhyst))	0 0				0	0		
Treselection	S dD												
Sintrasearch	dB	not sent not sent not sent not sent not sent not sent											
I _{oc}	dBm/3, 84 MHz						-	70					
Propagation Condition		AWGN											

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.

7

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.

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.

Parameter		Unit	Value	Comment
Initial Active cell			Cell1	
condition	condition Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition			Cell2	
	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.
DRX cycle length		S	1.28	The value shall be used for all cells in the test.
	T1		15	
T2		S	15	

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

Parameter	Unit		Ce	II 1		Cell 2				Cell 3			
Timeslot Number		C)	8		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	Т2	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}	10	0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor OCNS_Ec/lor	dB dB	-4,28	-4,28	-3 -4,28	-3 -4,28	-4,28	-4,28	-3 -4,28	-3 -4,28	-4,28	-4,28	-3 -4,28	-3 -4,28
		,	,			,						,	
\hat{I}_{or}/I_{oc}	dB	3	0	3	0	0	3	0	3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-70	-73			-73	-70			-76	-76		
Qoffset		0 0			0 0			0 0)		
Qhyst		0 0		(-	0		0		0			
Treselection	S	0 0		-	(-	0		0		0		
Sintrasearch	dB	not sent not sent			not sent not sent			not sent not sent					
		Cell 4 Cell 5						ell 5			Ce	II 6	
Timeslot		C)	٤	3	0		8		0		8	
		T1	T2	T1	Т2	T1	T2	T1	T2	T1	Т2	T1	T2
UTRA RF Channel Number			Char	nel 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	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\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		
Qoffset)				
Qhyst		0 0 0 0 0 0											
Treselection	S	0 0 0 0 0 0											
Sintrasearch	dB	not sent not sent 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.

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9

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.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 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.

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 FDD cell 2 during T1, and the FDD cell 2 is better ranked (indicating a cell re-selection according to section 4.2.2.4) than the TDD cell 1 during T2.

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	
	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.
	DRX cycle length	S	1.28	The value shall be used for all cells in the test.
	T1	S	15	During T1 cell 1 better ranked than cell 2
	T2	S	15	During T2 cell 2 better ranked than cell 1

Parameter	Unit	Cell 1 Cell 2					11 2
Timeslot Number		()	1	8	n.a	n.a.
		T1	T2	T 1	T 2	T 1	Т 2
UTRA RF Channel Number		Channel 1				Chan	inel 2
CPICH_Ec/lor	dB	n.	a.	n	.a.	-10	-10
PCCPCH_Ec/Ior	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/Ior				-3	-3	-15	-15
OCNS	dB	-4,28	-4,28	-4,28	-4,28	-0,941	-0,941
\hat{I}_{or}/I_{oc}	dB	3	-2	3	-2	-2	3
I _{oc}	dBm/3.84 MHz				-7.	70	
CPICH_RSCP	dBm	n.	.a.	n	.a.	-82	-77
PCCPCH_RSCP	dBm	-70	-75			n.a.	n.a.
Cell_reselection _and quality _measure		CPICH_RSCP				_RSCP	
Treselection	S	0				()
Propagation Condition			AW	/GN		AW	/GN

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.

11

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

P	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	TDD Cell
condition	Neighbour cell		Cell2	GSM Cell
Final condition	Active cell		Cell2	
DR)	X cycle length	S	1,28	UTRAN cell
BCCH rep	petition 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		0 8		3		
		T1	T2	T1	T2	
UTRA RF Channel Number		Chan	nel 1	Char	inel 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	-4,28	-4,28	-4,28	
\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 AWGN		/GN		
Treselection	S	0				
Ssearch _{RAT}	dB	not sent				

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

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

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.5.5 Cell Re-selection in CELL_PCH

NOTE: Requirements for cell re-selection in Cell_PCH state are the same as for cell re-selection in idle mode, therefore no separate test cases are required.

A.5.6 Cell Re-selection in URA_PCH

NOTE: Requirements for cell re-selection in URA_PCH state are the same as for cell re-selection in idle mode, therefore no seperate test cases are required.

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.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 frequency	dB	-71	Absolute P-CCPCH RSCP threshold for event 1G
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24	Measurement control information is sent before T1 starts.
T1	S	10	
T2	S	10	

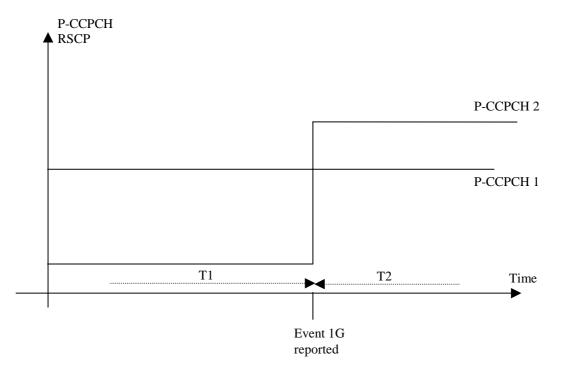


Figure A.8.1: Illustration of parameters for handover measurement reporting test case

Parameter	Unit		Ce	ll 1			Ce	ll 2		
Timeslot Number		(0		0 8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Channel 1				Char	nnel 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		-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	
\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.8.1.1.2 Test Requirements

The UE shall send one Event 1G triggered measurement report, with a measurement reporting delay less than [480] 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	1			Ce	ll 2	
Timeslot Number		()	8	3	()	8	3
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1			Channel 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		-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	-Infinity	6	-Infinity	6
I _{oc}	dBm/3. 84 MHz				-7	70			
PCCPCH_RSCP	dB	-70	-70			-Infinity	-67		
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			Се	ll 2	
Timeslot Number		()	5	3	n.	.a		
		T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number			Char	inel 1			Char	nnel 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	-15			
OCNS	dB	-4,28	-4,28	-4,28	-4,28	-0,941			
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	- infinity	-2		
I _{oc}	dBm/3. 84 MHz		-7	70			-	70	
CPICH_RSCP			n.	a.	-	- infinity	-82		
PCCPCH_RSCP	dB	-70	-70	-70	-70	n.	a.		
Propagation Condition			AWGN			AW	/GN		

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

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		Ce	ll 2
UTRA RF Channel number		Char	Channel 1 Channel		nnel 1
Timeslot		0	8	0	8
P-CCPCH Ec/lor	dB	-3	-	-3	-
SCH Ec/lor	dB	-9	-9	-9	-9
PICH_Ec/lor	dB	-	-3	-	-3
OCNS	dB	-4,28	-4,28	-4,28	-4,28
Îor/loc	dB	[]	[]
loc	dBm/ 3,84 MHz	-7	70	-7	70
Range 1:lo	dBm	-9470		-9470	
Range 2: lo	UDIII	-9450 -9450		50	
Propagation condition	-	AW	'GN	N 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.

Parameter	Unit	Ce	ell 1	Cell 2		
UTRA RF Channel number		Char	nnel 1	Channel 2		
Timeslot		0	0 8		8	
P-CCPCH Ec/lor	dB	-3	-3 -		-	
SCH Ec/lor	dB	-9	-9	-9	-9	
PICH_Ec/lor	dB	-	-3	-	-3	
OCNS	dB	-4,28	-4,28	-4,28	-4,28	
Îor/loc	dB	[]	[]	
loc	dBm/ 3,84 MHz	-70		-70		
Range 1:lo	dBm	-9470		-9470		
Range 2: lo	UDIII	-94	50	-9450		
Propagation condition	-	AM	/GN	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 $\hat{I}or/Ioc$.
- 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.

Parameter	Unit	Ce	1	Cell 2
Timeslot Number		0	8	n.a
UTRA RF Channel Number		Chan	nel 1	Channel 2
CPICH_Ec/lor	dB	n.a.	n.a.	-10
P-CCPCH_Ec/lor	dB	-3		-12
SCH_Ec/lor	dB	-9	-9	-12
SCH_t _{offset}		0	0	n.a.
PICH_Ec/lor			-3	-15
DPCH_Ec/lor	dB	n.a.	n.a.	-15
OCNS	dB	-4.28	-4.28	-1,11
\hat{I}_{or}/I_{oc}	dB	[]	0	10,5
I _{oc}	dBm/3,84 MHz	-70		Note 5
Range 1:lo	dBm	-9470		-9470
Range 2: lo	dBm	-94.	50	-9450
Propagation condition	-	AW	GN	AWGN

- 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 $\hat{I}or/Ioc$. *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 2					
Îor/loc	dB	-1	-1					
loc	dBm/ 3.84 MHz	Note 2	Note 2					
Range 1: Io	dBm/ 3,84 MHz	-9470	-9470					
Range 2: Io		-9450	-9450					
Propagation condition	-	AWGN						
Note 1: For relative accuracy requirement / Channel 1_lo –Channel 2_lo < 20 dB.								

Table A.9.4: UTRA carrier RSSI Inter frequency test parameters

3GPP TSG RAN WG4 Meeting #19

R4-011098

Edinburgh, Great Britain, 3rd - 7th September 2001

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	CHANGE REQUEST								
¥	25.123	CR <mark>97</mark>	ж	ev 🗕	# Ci	urrent vers	^{ion:} 4.1.0 [#]		
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the # symbols.									
Proposed change affects: # (U)SIM ME/UE X Radio Access Network X Core Network									
Title: ೫	Success	Rates in Test C	ases						
Source: ೫	RAN WG	4							
Work item code: #						<i>Date:</i>	2001-09-03		
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Reason for change	:	success rates o	of the tests	are not g	<mark>jiven in t</mark>	he test ca	ses in Annex A.		
Summary of chang		cess rates are in test cases for					ess rate of 90 % is u	ised	
Consequences if not approved:	TS2 succ	5.123 and the b	ehaviour o nissing, it r	of the use	d radio p	propagatio	eneral requirement n condition. If these o find out the correc	•	
Clauses affected:		2.1.2.1, A.4.2.2 3.1.2.1	.2.1, A.4.2	.3.2.1, A.4	4.2.4.2.1	, A.8.1.1.2	2.1, A.8.2.1.2.1,		
Other specs affected:	X Te	ther core specifiest specification & M Specifica	าร	¥					
Other comments:	ж								

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

Annex A (normative): Test Cases

A.1 Purpose of Annex

This Annex specifies test specific parameters for some of the functional requirements in chapters 4 to 9. The tests provide additional information to how the requirements should be interpreted for the purpose of conformance testing. The tests in this Annex are described such that one functional requirement may be tested in one or several test and one test may verify several requirements. Some requirements may lack a test.

The conformance tests are specified in TS34.122. Statistical interpretation of the requirements is described in Annex A.2.

A.2 Requirement classification for statistical testing

Requirements in this specification are either expressed as absolute requirements with a single value stating the requirement, or expressed as a success rate. There are no provisions for the statistical variations that will occur when the parameter is tested.

Annex A outlines the test in more detail and lists the test parameters needed. The test will result in an outcome of a test variable value for the DUT inside or outside the test limit. Overall, the probability of a "good" DUT being inside the test limit(s) and the probability of a "bad" DUT being outside the test limit(s) should be as high as possible. For this reason, when selecting the test variable and the test limit(s), the statistical nature of the test is accounted for.

The statistical nature depends on the type of requirement. Some have large statistical variations, while others are not statistical in nature at all. When testing a parameter with a statistical nature, a confidence level is set. This establishes the probability that a DUT passing the test actually meets the requirement and determines how many times a test has to be repeated and what the pass and fail criteria are. Those aspects are not covered by TS 25.123. The details of the tests, how many times to run it and how to establish confidence in the tests are described in TS 34.122. This Annex establishes what the test variable is and whether it can be viewed as statistical in nature or not.

A.2.1 Types of requirements in TS 25.123

A.2.1.1 Time and delay requirements on UE higher layer actions

One part of the RRM requirements are delay requirements:

In idle mode (A.4) there is cell selection delay and cell re-selection delay.

In UTRAN Connected Mode Mobility (A.5) there is measurement reporting delay and cell re-selection delay.

All have in common that the UE is required to perform an action observable in higher layers (e.g. camp on the correct cell) within a certain time after a specific event (e.g. a new strong pilot arises). The delay time is statistical in nature for several reasons, among others that measurements required by the UE are performed in a fading radio environment.

The variations make a strict limit unsuitable for a test. Instead there is a condition set for a correct action by the UE, e.g. that the UE shall camp on the correct cell within X seconds. Then the rate of correct events is observed during repeated tests and a limit is set on the rate of correct events, usually 90% correct events are required. How the limit is applied in the test depends on the confidence required, further detailed are in TS 34.122.

A.2.1.2 Measurements of power levels, relative powers and time

A very large number of requirements are on measurements that the UE performs:

- In UTRAN Connected Mode Mobility (A.5) there are measurement reports.
- Measurement performance requirements (A.8) has requirements on all type of measurements.

The accuracy requirements on measurements are expressed in this specification as a fixed limit (e.g. +/-X dB), but the measurement error will have a distribution that is not easily confined in fixed limits. Assuming a Gaussian distribution of the error, the limits will have to be set at +/-3,29 σ if the probability of failing a "good DUT" in a single test is to be kept at 0,1%. It is more reasonable to set the limit tighter and test the DUT by counting the rate of measurements that are within he limits, in a way similar to the requirements on delay.

A.2.1.3 Implementation requirements

A few requirements are strict actions the UE should take or capabilities the UE should have, without any allowance for deviations. These requirements are absolute and should be tested as such. Examples are

"Event triggered report rate" in UTRAN Connected Mode Mobility (A.5)

A.2.1.4 Physical layer timing requirements

All requirements on "Timing Characteristics" (A.7) are absolute limits on timing accuracy.

A.2.1.5 BER and BLER requirements

Some measurement report procedures in "UE Measurement procedures" (A.8) have requirements on DCH BLER. These are tested in the same way as BLER requirements in TS 25.102.

A.3 Reserved for Future Use

Editors Note: This section is included in order to make the following section numbering, match the sections in the beginning of this specification.

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

A.4.2.1.1.1 3.84 Mcps TDD option

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

F	Parameter		Parameter		Parameter I		Value	Comment
Initial	Active cell		Cell1					
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6					
Final condition	Active cell		Cell2					
	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.				
DRX cycle length		S	1.28	The value shall be used for all cells in the test.				
	T1		15					
	T2	S	15					

Parameter	Unit													
		Cell 1			Cell 2				Cell 3					
Timeslot Number														
)	8	3	()	8		0		8		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nel 1	I		Char	nnel 1	I		Char	nel 1	I	
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	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	
\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			
Qoffset			0		0	()		0		0	()	
Qhyst			0		0		0	0		0		0		
Treselection	S))))	0		0		
Sintrasearch	dB	not	sent	not	sent	not	sent	not	sent	not sent not ser		sent		
		Cell 4				Cell 5			Cell 6					
Timeslot		()	٤	3	0 8		3	0		8			
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nel 1	I	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	4.00	4.00	-3	-3	4.00	4.00	-3	-3	4.00	4.00	-3	-3	
OCNS	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	
\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			
Qoffset		0 0			()		0)		
Qhyst			2)	()		0		2	
Treselection	S) cont) cont	() oont		0 oont) oont	
Sintrasearch	dB	not sent not sent not sent not sent not sent												
I _{oc}	dBm/3, 84 MHz		-70											
Propagation Condition		AWGN												

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

A.4.2.1.1.2 1.28 Mcps TDD option

This scenario implies the presence of 1 carrier and 6 cells as given in Table A.4.1A and A.4.2A.

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

	Parameter		Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
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.
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 DWPTS		(0 DWPTS		PTS	0		DWPTS		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	inel 1	<u> </u>		Chan	inel 1	<u> </u>		Char	nel 1	
PCCPCH_Ec/lor	DB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	DB			0	0			0	0			0	0
\hat{I}_{or}/I_{oc}	DB	[9]	[7]	[9]	[7]	[7]	[9]	[7]	[9]	[-1]	[-1]	[-1]	[-1]
PCCPCH RSCP	DBm	[-64]	[-66]			[-66]	[-64]			[-74]	[-74]		
Qoffset		[0]	[0)]	[([]	[0]	[0]]	0]
Qhyst Treselection Sintrasearch	S DB	[0] [0] not sent		[0] [0] not sent		[([0] [0] [0] [0] not sent not sent		0]	[0] [0] not sent		[0] [0] not sent	
		Cell 4				Cell 5				Cell 6			
Timeslot		(D	DW	WPTS 0		DWPTS		0		DWPTS		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	inel 1		Channel 1			Channel 1				
PCCPCH_Ec/lor	DB	-3	-3			-3	-3			-3	-3		
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]		
Qoffset		[)] [0]		[0]		[0]		[0]	[0]	
Qhyst	-	[0] [0]		[(0]	[0]]	0]	[0]		
Treselection Sintrasearch	S DB	[0] [0] [0] [0] [0] [0] [0] [0] [0] [0]					[not	0] sent]					
I _{oc}	dBm/1. 28 MHz		-70										
Propagation Condition		AWGN											

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

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:

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

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.4.2.1.2.2 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 the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

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

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

A.4.2.2.1.1 3.84 Mcps TDD option

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.

	Parameter		Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
	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.
DF	RX 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			Ce	II 3				
Timeslot Number													
		C)	٤	3)	8		0		8	
		T1	T2	T1	T2	T1	T2	T1	Т2	T1	Т2	T1	T2
UTRA RF Channel Number			Channel 1			Char	nel 2			Char	nnel 1		
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t _{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	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	3	0	3	0	0	3	0	3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-70	-73			-73	-70			-76	-76		
Qoffset		C)	()	()	0		0		0	
Qhyst		C)	()	0 0)	0		0	
Treselection	S	C)	0		0		0		0		0	
Sintrasearch	dB	not s	sent	not	sent	not sent not sent		not sent		not sent			
Timeslot			Ce	II 4		Cell 5				Cell 6			
		C)	8	3	0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nel 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	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\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		
Qoffset			0 0			())	(0	()
Qhyst			0 0				0 0			0	(
Treselection	S	-	0 0 0 0 0 0										
Sintrasearch I _{oc}	dB dBm/3, 84 MHz	not s	sent	not	sent	l not	sent -	<u>not</u> : 70	sent	not not	sent	not	sent
Propagation	0-11/11/2						AW	/GN					
Condition													

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.

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

	Parameter	Unit	Value	Comment
Initial	Initial Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
	s Service Class (ASC#0) Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	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				Ce	II 2		Cell 3			
Timeslot Number		(D	DW	PTS	()	DWPTS		0		DWPTS	
		T1	T2	T1	Т2	T1	T2	T1	Т2	T1	T2	T1	Т2
UTRA RF Channel Number			Channel 1			Chan	inel 2	1		Chan	inel 1	I	
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]		
Qoffset		[(0]	[[0]	[(0]	[0]]	0]]	0]
Qhyst			0]	[(0]	[0]		[0]		[0]		[0]	
Treselection Qintrasearch	s dB		0] sent]] not s	0] sent]	[0] [0] [not sent] [not sent]		[0] [not sent]		[0] t] [not sent]			
			Cell 4			Cell 5			Cell 6				
Timeslot													
		(D	DW	PTS)	DWPTS		0		DWPTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Cha	nnel			Chan	inel 2	1	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]		
Qoffset]	0]					
Qhyst			[0] [0] [0] [0]					0]					
Treselection Qintrasearch	s dB		0]	[0] [0] [0] [0] [0] [0]					0] contl				
I _{oc}	dBm/3, 84 MHz	[not sent] [not sent] [not sent] [not sent] [not sent] [not sent] -70											
Propagation Condition			AWGN										

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

Note: P-CCPCH_RSCP is the quality measure for cell selection and re-selection.

A.4.2.2.2 Test Requirements

A.4.2.2.2.1 3.84 Mcps TDD option

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

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

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

NOTE:

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

T_evaluateTDDA DRX cycle length of 1280ms is assumed for this test case, this leads to a T_evaluate TDD of
6.4s 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.4.2.2.2.2 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 RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

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

NOTE:

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

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

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 TDD cell 2 during T1 and the TDD cell 2 is better ranked than the 1.28 Mcps TDD OPTION cell 1 during T2.

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 reselection

	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	
	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.
C	DRX cycle length	S	1,28	
	T1	S	15	Cell 1 better ranked than cell 2
T2		S	15	Cell2 better ranked than cell 1

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		(0		DwPts		0		3		
		T1	T2	T 1	T 2	T1	T2	T 1	T 2		
UTRA RF Channel Number			Char	nel 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								-3	-3		
OCNS	dB	n.	a.	n.a.		-4,28	-4,28	-4,28	-4,28		
\hat{I}_{or}/I_{oc}	dB	[10]	[7]			[7]	[10]	[7]	[10]		
I _{oc}	dBm/3. 84 MHz	-70									
PCCPCH_RSCP	dBm	[-63] [-66]		[-66]	[-63]						
Treselection	S	0 0									
Propagation Condition			-				AW	'GN			

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.

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.

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 FDD cell 2 during T1, and the FDD cell 2 is better ranked (indicating a cell re-selection according to section 4.2.2.4) than the TDD cell 1 during T2.

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

	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	TDD cell
condition	Neighbour cells		Cell2	FDD cell
Final condition	Active cell		Cell2	
	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.
	DRX cycle length	S	1.28	The value shall be used for all cells in the test.
	T1	S	15	During T1 cell 1 better ranked than cell 2
	T2	S	15	During T2 cell 2 better ranked than cell 1

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

Parameter	Unit		Ce	II 1		Ce	2	
Timeslot Number		()	5	3	n.a	n.a.	
		T1	T2	T 1	T 2	T 1	T 2	
UTRA RF Channel Number			Char	nel 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				-3	-3	-15	-15	
OCNS	dB	-4,28	-4,28	-4,28	-4,28	-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_reselection_an d quality _measure		ii			CPICH	CPICH_RSCP		
Treselection	S	0 0)		
Propagation Condition			AW	'GN		AW	GN	

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.4.2.3.1.2 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.

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 FDD cell 2 during T1 and the FDD cell 2 is better ranked than the 1.28 Mcps TDD OPTION cell 1 during T2.

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

Parameter	Unit		Ce	ll 1		Ce	ll 2
Timeslot Number		()	DwPts		n.	a.
		T1	T2	T 1	T 2	T1	T2
UTRA RF Channel Number			Chan	inel 1		Char	nel 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						-15	-15
OCNS	dB	n.	a.	n.a.		- 0,941	- 0,941
\hat{I}_{or}/I_{oc}	dB	[]	[]			[]	[]
I _{oc}	DBm/1. 28 MHz			-7	70		
PCCPCH_RSCP	dBm	[]	[]			n.a.	n.a.
CPICH_Ec/lo		n.a. []			[]		
Treselection	S	0 0)	
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.

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.

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.

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

	Parameter	Unit	Value	Comment
Initial	Initial Active cell Cell1		Cell1	TDD Cell
condition	Neighbour cell		Cell2	GSM Cell
Final condition	Active cell		Cell2	
DR	X 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	

Parameter	Unit					
Timeslot Number		0		٤	3	
		T1 T2		T1	T2	
UTRA RF Channel Number		Chan	nel 1	Char	inel 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	-4,28	-4,28	-4,28	
\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		AW	'GN	AWGN		
Treselection	S	0				
Ssearch _{RAT}	dB					

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

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

Parameter	Unit	Cell 2 (GSM)				
Falameter	Unit	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 Reselection

	Parameter		Value	Comment
Initial	Active cell		Cell1	
condition	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						
Timeslot Number		0		Dwl	PTS		
		T1 T2		T1	T2		
UTRA RF Channel Number		Channel 1		Char	nel 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		1	70		
PCCPCH RSCP	dBm	[-64]	[-66]				
Propagation Condition		AW	'GN	AM	/GN		
Cell_selection_and_ reselection_quality_m easure		P-CCPCH RSCP					
Treselection	s	[]					
Ssearch _{RAT}	dB						

Parameter	Unit	Cell 2 (GSM)				
i arameter	onn	T1	Т2			
Absolute RF Channel Number		ARFCN 1				
RXLEV	dBm	-80	-70			
RXLEV_ACCESS_ MIN	dBm	-1	00			
MS_TXPWR_MAX_ CCH	dBm	30				

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.

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

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

A.5.4.1 3.84 Mcps TDD option

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.5.4.2 1.28 Mcps TDD option

A.5.4.2.1 One frequency present in neighbour list

Note: Cell reselection in Cell-FACH is still under discussion.

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 5.4.2.1.1.

The test parameters are given in Table A.5.1 and A.5.2

Table A.5.1: 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 condition	Active cell		Cell2	
	T1	S		T1 need to be defined so that cell re- selection reaction time is taken into account.
T2		S		T2 need to be defined so that cell re- selection reaction time is taken into account.

Table A.5.2: Cell specific test parameters for Cell Re-selection in CELL_FACH

Parameter	Unit													
			Ce	II 1		Cell 2				Cell 3				
Timeslot Number							DTO		<u></u>	DWDTO				
		(0		DWPTS		0		DWPTS		0	DWPTS		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	inel 1			Char	nnel 1			Char	nnel 1		
PCCPCH_Ec/lor	DB	-3	-3			-3	-3			-3	-3			
DwPCH_Ec/lor	DB			0	0			0	0			0	0	
\hat{I}_{or}/I_{oc}	DB	[9]	[7]	[9]	[7]	[7]	[9]	[7]	[9]	[-1]	[-1]	[-1]	[-1]	
PCCPCH RSCP	DBm	-64	-66			-66	-64			-74	-74			
Qoffset		[]	[]	[]]]	[]	[]	
Qhyst	DBm] []]]] []	
Treselection Qintrasearch	DB] []]	[]]	[]] []]] []]]]	
		Cell 4				Cell 5				Cell 6				
Timeslot														
		(D	DW	PTS	0		DWPTS		0		DWPTS		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nel 1		Channel 1			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			
Qoffset								[]					
Qhyst	DBm]	j –]]	[] _]]			
Treselection Qintrasearch	DB] []]]				
I _{oc}	dBm/1. 28 MHz		-70											
Propagation			AWGN											
Condition														

A.5.4.2.2 Two frequency present in neighbour list

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 Table A.5.3 and A.5.4.

	Parameter		Value	Comment
initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
final condition	Active cell		Cell2	
T1		S		T1 need to be defined so that cell re- selection reaction time is taken into account.
T2		S		T2 need to be defined so that cell re- selection reaction time is taken into account.

Table A.5.4: Cell specific test parameters for Cell re-selection in CELL_FACH state

Parameter	Unit													
			Ce	II 1		Cell 2				Cell 3				
Timeslot Number		(0		DWPTS		0		DWPTS		0		DWPTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Chan	nel 1	1		Chan	inel 2	I		Char	nel 1		
PCCPCH_Ec/lor	DB	-3	-3			-3	-3			-3	-3			
DwPCH_Ec/lor	DB			0	0			0	0			0	0	
\hat{I}_{or}/I_{oc}	DB	[9]	[7]	[9]	[7]	[7]	[9]	[7]	[9]	[-1]	[-1]	[-1]	[-1]	
PCCPCH RSCP	DBm	[-64]	[-66]			[-66]	[-64]			[-74]	[-74]			
Qoffset]]	[]]]]]] []]]	
Qhyst	DBm]		[] []]]	
Treselection Qintrasearch	DB] []]	[]]] []]	[]]] []]]]	
		Cell 4				Cell 5				Cell 6				
Timeslot														
		()	DW	PTS	0		DWPTS		0		DWPTS		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Cha	nnel	1	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]			
Qoffset		[]	[]	[]	[]	[]	[]	
Qhyst Treselection	DBm	[]]	[]]	[r]]	
Qintrasearch	DB	L [
I _{oc}	dBm/1. 28 MHz		-70											
Propagation Condition			AWGN											

Note: PCCPCH_RSCP is the quality measure for cell selection and re-selection.

A.5.5 Cell Re-selection in CELL_PCH

NOTE: Requirements for cell re-selection in Cell_PCH state are the same as for cell re-selection in idle mode, therefore no separate test cases are required.

A.5.6 Cell Re-selection in URA_PCH

NOTE: Requirements for cell re-selection in URA_PCH state are the same as for cell re-selection in idle mode, therefore no seperate test cases are required.

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.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 "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.

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			Measurement control information is
size		24	sent before T1 starts.
T1	S	10	
T2	S	10	

Table A.8.1A: General test parameters for correct reporting of intra frequency neighbours in AWGN propagation condition

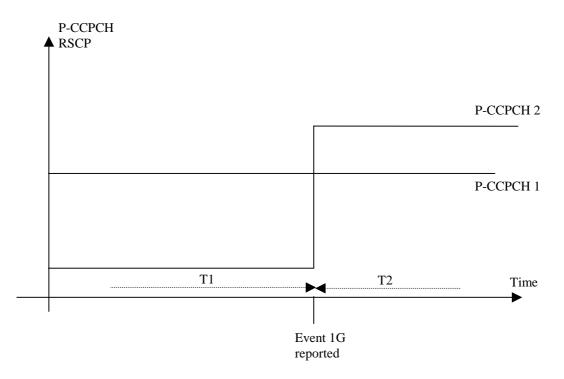


Figure A.8.1: Illustration of parameters for handover measurement reporting test case

Parameter	Unit		Ce	ll 1			Ce	ll 2	
Timeslot Number		()	5	3	()	8	3
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nnel 1			Char	nel 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		-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\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		AWGN							

 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.

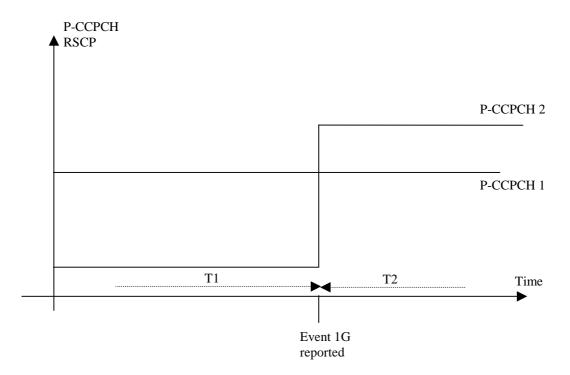


Figure A. 8.1A: Illustration of parameters for handover measurement reporting test case

Table A.8.1C: General test parameters for correct reporting of intra frequency neighbours in
AWGN propagation condition

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			Measurement control information is
size		[24]	sent before T1 starts.
T1	S	10	
T2	S	10	

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

Parameter	Unit	Cell 1				Ce	ll 2				
Timeslot Number		(0		0 DwP		PTS	0		DwPTS	
		T1	T2	T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number			Char	nnel 1			Char	nel 2			
PCCPCH_Ec/lor	dB		3			-:	3				
DwPCH_Ec/lor	dB			()		0		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.8.1.1.2 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.

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 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 non used frequency	dB	-71	Absolute P-CCPCH RSCP threshold for event 2C
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list		24 on channel 1	Measurement control information is
size		16 on channel 2	sent before T1 starts.
T1	S	10	
T2	S	10	

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

Parameter	Unit		Ce	1			Ce	ll 2	
Timeslot Number		0 8				()	8	3
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nel 1			Char	nel 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		-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	-Infinity	6	-Infinity	6
I _{oc}	dBm/3. 84 MHz				-7	70			
PCCPCH_RSCP	dB	-70	-70			-Infinity	-67		
Propagation Condition		AWGN							

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 active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0
Power Control		On	
Active cell		Cell 1	
Threshold non used frequency	dB	[-71]	Absolute P-CCPCH RSCP threshold for event 2C
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		[24] on channel 1 [16] on channel 2	Measurement control information is 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			Ce	ll 2	
Timeslot Number		()	DwF	PTS	0		DwPTS	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1					Char	inel 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		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.

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 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 non used frequency	dB	-86	Absolute CPICH RSCP threshold for event 2C
Hysteresis	dB	0	
W non-used frequency		1	Applicable for event 2C
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	ll 2	
Timeslot Number		0 8		n.a					
		T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number			Char	nel 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	-4,28	-4,28	-4,28	-4,28	-0,941			
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	-infinty	-2		
I _{oc}	dBm/3. 84 MHz		-	70			-7	70	
CPICH_RSCP			n.	a.		-infinity	-82		
PCCPCH_RSCP	dB	-70	-70 -70 -70 -70			n.a.			
Propagation Condition		1 . 1		'GN			AW	'GN	

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

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 active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0.
Power Control		On	
Active cell		Cell 1	
Threshold non used frequency	dB	-86	Absolute CPICH RSCP threshold for event 2C
Hysteresis	dB	0	
W non-used frequency		1	Applicable for event 2C
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list		24 on channel 1	Measurement control information is
size		16 on channel 2	sent before T1 starts.
T1	S	10	
T2	S	10	

Parameter	Unit	Cell 1				Cell 2		
Timeslot Number		()	DwPTS		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				-7	70	
CPICH_RSCP		n.a.				[-Infinity]	[-82]	
PCCPCH_RSCP	dB	[-70]	[-70]			n.a.	n.a.	
Propagation Condition		AWGN				AW	GN	

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

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.

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.

Parameter	Unit	Cell 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	-4,28	-4,28	-4,28	-4,28
Îor/loc	dB	[[]]
loc	dBm/ 3,84 MHz	-7	70	-70	
Range 1:lo	dBm	-9470		-9470	
Range 2: lo	uDIII	-9450		-9450	
Propagation condition	-	AWGN		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 $\hat{I}or/Ioc$.
- Note 5: The DPCH of all cells are located in an other timeslot than 0 or 8

A.9.1.1.2 1.28 Mcps TDD option

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

	Table A. 9.1A Intra freq	uency test parameters	for UE RX Measurements
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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			Channel 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							
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_RSCP $| \leq [20]$ 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 a timeslot other than 0

A.9.1.2 TDD inter frequency measurements

A.9.1.2.1 3.84 Mcps TDD option

In this case all cells are on the same frequency. The table A.9.2 and notes 1-5 define the limits of signal strengths and code powers, where the requirement is applicable.

Parameter	Unit	Cell 1		Cell 2	
UTRA RF Channel number		Char	nnel 1	Channel 2	
Timeslot		0	8	0	8
P-CCPCH Ec/lor	dB	-3	-	-3	-
SCH Ec/lor	dB	-9	-9	-9	-9
PICH_Ec/lor	dB	-	-3	-	-3
OCNS	dB	-4,28	-4,28	-4,28	-4,28
Îor/loc	dB	[]	[]	
loc	dBm/ 3,84 MHz	-7	70	-70	
Range 1:lo	dBm	-9470		-9470	
Range 2: lo	UDIII	-9450		-9450	
Propagation condition	-	AWGN		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 $| \le [20]$ dB.
- Note 4: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.
- Note 5: The DPCH of all cells are located in an other timeslot than 0 or 8

A.9.1.2.2 1.28 Mcps TDD option

If not otherwise stated, the test parameters in table A. 9.2A should be applied for UE RX measurements requirements in this section.

Parameter	Unit	Cell 1			Cell 2				
Timeslot Number		()	DwPTS		C)	DwPTS	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1			Channel 2				
PCCPCH_Ec/lor	dB	-3			-3				
DwPCH_Ec/lor	dB	0)			()	
\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								

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

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

- Note 2: / P-CCPCH_RSCP1 PCCPCH_RSCP2 $\leq 20 \text{ dB}$.
- Note 3: $|Io P CCPCH_RSCP1, 2| \leq [20] dB.$
- 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 a timeslot other than 0

A.9.1.3 FDD inter frequency measurements

A.9.1.3.1 3.84 Mcps TDD option

In this case both cells are in different frequency. Table A.9.3 and notes 1-6 define the limits of signal strengths and code powers, where the requirement is applicable.

Parameter	Unit	Cell 1		Cell 2
Timeslot Number		0	8	n.a
UTRA RF Channel Number		Chan	nel 1	Channel 2
CPICH_Ec/lor	dB	n.a.	n.a.	-10
P-CCPCH_Ec/lor	dB	-3		-12
SCH_Ec/lor	dB	-9	-9	-12
SCH_t _{offset}		0	0	n.a.
PICH_Ec/lor			-3	-15
DPCH_Ec/lor	dB	n.a.	n.a.	-15
OCNS	dB	-4.28	-4.28	-1,11
\hat{I}_{or}/I_{oc}	dB	[]	[]	10,5
I _{oc}	dBm/3,84 MHz	-70		Note 5
Range 1:lo	dDm	-9470		-9470
Range 2: lo	dBm -9450			-9450
Propagation condition	-	AW	GN	AWGN

Table A.9.3 CPICH Inter frequency test parameters

- Note 1: $CPICH_RSCP1, 2 \ge -114$ 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 $\hat{I}or/Ioc$. *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: Io	dBm/ 3,84 MHz	-9470	-9470				
Range 2: Io	UDITI/ 3,04 WITIZ	-9450	-9450				
Propagation condition	-	AW	GN				
Note 1: For relative accuracy requirement Channel 1_lo –Channel 2_lo < 20 dB.							

A.9.1.4.2 1.28 Mcps TDD option

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

Table A.9.4A: UTRA carrier RSSI	Inter frequency test parameters
---------------------------------	---------------------------------

Parameter	Unit	Cell 1	Cell 2
UTRA RF Channei number	-	Channel 1	Channel 2
Îor/loc	DB	-1	-1
loc	dBm/1.28 MHz	Note 2	Note 2
Range 1: lo	dBm/1.28 MHz	-9470	-9470
Range 2: lo		-9450	-9450
Propagation condition	-	AW	/GN

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

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

3GPP TSG RAN WG4 Meeting #19

R4-011105

Edinburgh, Great Britain, 3rd - 7th September 2001

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6A RRC Connection Control

6A.1 RRC Connection re-establishment

6A.1.1 Introduction

<u>RRC</u> connection re-establishment is needed, when a UE in state CELL_DCH loses radio connection due to radio link failure. The procedure when a radio link failure occurs in CELL_DCH is specified in TS 25.331.

6A.1.2 Requirements

The requirements in this section are applicable when the UE performs a RRC connection re-establishment to a cell belonging to any of the frequencies present in the previous (old) monitored set.

When the UE is in CELL_DCH state, the UE shall be capable of sending a CELL UPDATE message using the cause "radio link failure" within $T_{RE-ESTABLISH}$ seconds from when the CPHY-Out-Of-Synch primitive indicates lost synchronisation.

The RRC connection re-establishment delay requirement ($T_{RE-ESTABLISH-REQ}$) is defined as the time between the moment when the CPHY-Out-Of-Synch primitive indicates lost synchronisation, to when the UE starts to send a CELL UPDATE message using the cause "radio link failure" on the PRACH.

 $T_{RE-ESTABLISH-REQ}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had a dedicated connection to the cell during the last 5 seconds

- the cell has been measured by the UE during the last 5 seconds

The RRC connection re-establishment delay shall be less than 50ms+T_{search} + T_{SI}

in case that the target cell is known by the UE

<u>and</u>

 $50ms+T_{search}*NF+T_{SI}$

in case that the target cell is not known by the UE

where

 T_{search} is the time it takes for the UE to search the cell.

 $T_{search} = 100 \text{ ms}$ if the target cell is known by the UE, and

 $T_{search} = 800 \text{ ms}$ if the target cell is not known by the UE.

where T_{SI} is the maximum repetition period of all relevant system information blocks that needs to be received by the UE to camp on a cell (ms).

NF is the number of different frequencies in the monitored set.

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

3GPP TSG RAN WG4 Meeting #19

Edinburgh, Great Britain, 3rd - 7th September 2001

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Reason for change:		sponding REL action re-estab				requirements for 5.123.	RRC
Summary of change		luction of a new lishment	w section 6a	containing	the requireme	ents for RRC link r	e-
Consequences if not approved:		sistency betwe 3 and 25.123.	en releases	s. Missing re	equirements, ir	nconsistency betw	veen
Clauses affected:	ж <mark>6а</mark>						
Other specs affected:	Те	her core specifi st specificatior M Specificatio	S	ж			
Other comments:	¥						

How to create CRs using this form:

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

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

6A RRC Connection Control

6A.1 RRC Connection re-establishment

6A.1.1 Introduction

<u>RRC</u> connection re-establishment is needed, when a UE in state CELL_DCH loses radio connection due to radio link failure. The procedure when a radio link failure occurs in CELL_DCH is specified in TS 25.331.

6A.1.2 Requirements

6A.1.2.1 for 3.84Mcps

The requirements in this section are applicable when the UE performs a RRC connetion re-establishment to a cell belonging to any of the frequencies present in the previous monitored set.

When the UE is in CELL_DCH state, the UE shall be capable of sending a CELL UPDATE message using the cause "radio link failure" within $T_{RE-ESTABLISH}$ seconds from when the CPHY-Out-Of-Synch primitive indicates lost synchronisation.

The RRC connection re-establishment delay requirement ($T_{RE-ESTABLISH-REQ}$) is defined as the time between the moment when the CPHY-Out-Of-Synch primitive indicates lost synchronisation, to when the UE starts to send a CELL UPDATE message using the cause "radio link failure" on the PRACH.

 $\underline{T_{RE-ESTABLISH-REQ}}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had a dedicated connection to the cell during the last 5 seconds

- the cell has been measured by the UE during the last 5 seconds

The RRC connection re-establishment delay shall be less than

 $50ms+T_{search}+T_{SI}$

in case that the target cell is known by the UE

and

 $50ms+T_{search}*NF+T_{SI}$

in case that the target cell is not known by the UE

where

 T_{search} is the time it takes for the UE to search the cell.

 $T_{search} = 100 \text{ ms if the target cell is known by the UE, and}$

 T_{search} = 800 ms if the target cell is not known by the UE.

where T_{SI} is the maximum repetition period of all relevant system information blocks that needs to be received by the UE to camp on a cell (ms).

NF is the number of different frequencies in the monitored set.

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

86