

TSG RAN Meeting #13
Beijing, China, 18-21 September 2001

RP-010620

Title: CRs (R'99 and Rel-4 Category A) to TS 25.133 (2)

Source TSG RAN WG4

Agenda item: 8.4.3

RAN4 Tdoc	Spec	CR	Title	Cat	Phase	Curr Ver	New Ver
R4-011016	25.133	146	Test conditions for GSM Carrier RSSI	F	Rel99	3.6.0	3.7.0
R4-011066	25.133	147	Test conditions for GSM Carrier RSSI	A	Rel-4	4.1.0	4.2.0
R4-011094	25.133	148	Transport Channel BER accuracy requirement	F	Rel99	3.6.0	3.7.0
R4-011096	25.133	149	Transport Channel BER accuracy requirement	A	Rel-4	4.1.0	4.2.0
R4-011108	25.133	150	Clarification to Requirement classification for statistical testing	F	Rel99	3.6.0	3.7.0
R4-011263	25.133	151	Clarification to Requirement classification for statistical testing	A	Rel-4	4.1.0	4.2.0
R4-011109	25.133	152	Correction to FDD/TDD cell re-selection test case	F	Rel99	3.6.0	3.7.0
R4-011262	25.133	153	Correction to FDD/TDD cell re-selection test case	A	Rel-4	4.1.0	4.2.0
R4-011139	25.133	154	Editorial corrections to UTRAN measurements in section 9.2	F	Rel99	3.6.0	3.7.0
R4-011271	25.133	155	Editorial corrections to UTRAN measurements in section 9.2	A	Rel-4	4.1.0	4.2.0
R4-011194	25.133	156	RACH reporting	F	Rel99	3.6.0	3.7.0
R4-011261	25.133	157	RACH reporting	A	Rel-4	4.1.0	4.2.0
R4-011200	25.133	158	Correction for Test Case A.8.1.3	F	Rel99	3.6.0	3.7.0
R4-011276	25.133	159	Correction for Test Case A.8.1.3	A	Rel-4	4.1.0	4.2.0
R4-011215	25.133	160	UTRAN to GSM cell re-selection test cases	F	Rel99	3.6.0	3.7.0
R4-011275	25.133	161	UTRAN to GSM cell re-selection test cases	A	Rel-4	4.1.0	4.2.0
R4-011226	25.133	162	Requirement for the monitor list	F	Rel99	3.6.0	3.7.0
R4-011264	25.133	163	Requirement for the monitor list	A	Rel-4	4.1.0	4.2.0
R4-011300	25.133	164	Correction for event triggered report	F	Rel99	3.6.0	3.7.0
R4-011351	25.133	165	Correction for event triggered report	A	Rel-4	4.1.0	4.2.0

CR-Form-v4			
CHANGE REQUEST			
⌘	25.133 CR 146	⌘ 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 Core Network

Title:	⌘ Test conditions for GSM Carrier RSSI		
Source:	⌘ RAN WG4		
Work item code:	⌘	Date:	⌘ 2001-06-29
Category:	⌘ F	Release:	⌘ Rel99
	<i>Use <u>one</u> of the following categories:</i> 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 TR 21.900 .		<i>Use <u>one</u> of the following releases:</i> 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:	⌘ No test setup is defined for GSM Carrier RSSI		
Summary of change:	⌘ A setup with which the GSM Carrier RSSI measurement can be tested. If we claim that TSG T WG1 shall follow the annex in 25.133 when defining the tests this annex must be complete.		
Consequences if not approved:	⌘ There will not be any tests of measurements on GSM RSSI that are specified.		

Clauses affected:	⌘ A.9.1		
Other specs affected:	⌘ <input type="checkbox"/>	Other core specifications	⌘ 34.121
	<input checked="" type="checkbox"/>	Test specifications	
	<input type="checkbox"/>	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: http://www.3gpp.org/3G_Specs/CRs.htm. 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 <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

A.9.1.3 UTRA Carrier RSSI

A.9.1.3.1 Test Purpose and Environment

The purpose of this test is to verify that the UTRA Carrier RSSI measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.3.

Table A.9.5 defines the limits of signal strengths, where the requirement is applicable.

When verifying the UTRA Carrier RSSI absolute accuracy requirement only cell 1 in table A.9.5 shall be present. When verifying the UTRA Carrier RSSI relative accuracy requirement both cell 1 and 2 in table A.9.5 shall be present.

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

Parameter	Unit	Cell 1	Cell 2
UTRA RF Channel number	-	Channel 1	Channel 2
\hat{I}_{or}/I_{oc}	dB	-1	-1
I_{oc}	dBm/ 3.84 MHz	$I_{oc} -4.13 \text{ dB} = I_{oc}$, Note 1	$I_{oc} -4.13 \text{ dB} = I_{oc}$, Note 1
Range 1: I_{oc} Range 2: I_{oc}	dBm/ 3.84 MHz	-94...-70 -94...-50	-94...-70 -94...-50
Propagation condition	-	AWGN	
NOTE 1: I_{oc} level shall be adjusted according the total signal power I_{o} at receiver input and the geometry factor \hat{I}_{or}/I_{oc} .			

A.9.1.3.2 Test Requirements

The UTRA Carrier RSSI measurement accuracy shall meet the requirements in section 9.1.3.

A.9.1.3A GSM Carrier RSSI

A.9.1.3A.1 Test Purpose and Environment

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

In the test in Cell_DCH state compressed mode with purpose "GSM Carrier RSSI Measurement" is applied to measure on GSM. The gap length is 7, detailed definition is in TS 25.101 annex A.5. Table A.9.X defines the limits of signal strengths and code powers on the UMTS FDD cell, where the requirement is applicable. In the measurement control information it is indicated to the UE that periodic reporting of the GSM RSSI measurement.

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

Table A.9.x1: General GSM Carrier RSSI test parameters

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

Table A.9.x2: Cell specific GSM Carrier RSSI test parameters

<u>Parameter</u>	<u>Unit</u>	<u>Cell 1</u>
<u>UTRA RF Channel number</u>	<u>-</u>	<u>Channel 1</u>
<u><i>I_{or}/I_{oc}</i></u>	<u>dB</u>	<u>-1</u>
<u><i>I_{oc}</i></u>	<u>dBm/ 3.84 MHz</u>	<u>-70</u>
<u><i>Propagation condition</i></u>	<u>-</u>	<u>AWGN</u>

A.9.1.3A.2 Test Requirements

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

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

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

CR-Form-v4	
CHANGE REQUEST	
⌘ 25.133 CR 147 ⌘	ev - ⌘ Current version: 4.1.0 ⌘

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 Core Network

Title:	⌘ Test conditions for GSM Carrier RSSI	
Source:	⌘ RAN WG4	
Work item code:	⌘	Date: ⌘ 2001-08-29
Category:	⌘ A	Release: ⌘ Rel-4
	<i>Use one of the following categories:</i> 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 TR 21.900 .	<i>Use one of the following releases:</i> 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:	⌘ No test setup is defined for GSM Carrier RSSI	
Summary of change:	⌘ A setup with which the GSM Carrier RSSI measurement can be tested. If we claim that TSG T WG1 shall follow the annex in 25.133 when defining the tests this annex must be complete.	
Consequences if not approved:	⌘ There will not be any tests of measurements on GSM RSSI that are specified.	

Clauses affected:	⌘ A.9.1	
Other specs affected:	<input type="checkbox"/> Other core specifications <input checked="" type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘ 34.121
Other comments:	⌘ Corresponding R99 CR in R4-011016	

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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.9.1.3 UTRA Carrier RSSI

A.9.1.3.1 Test Purpose and Environment

The purpose of this test is to verify that the UTRA Carrier RSSI measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.3.

Table A.9.5 defines the limits of signal strengths, where the requirement is applicable.

When verifying the UTRA Carrier RSSI absolute accuracy requirement only cell 1 in table A.9.5 shall be present. When verifying the UTRA Carrier RSSI relative accuracy requirement both cell 1 and 2 in table A.9.5 shall be present.

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

Parameter	Unit	Cell 1	Cell 2
UTRA RF Channel number	-	Channel 1	Channel 2
\hat{I}_{or}/loc	dB	-1	-1
loc	dBm/ 3.84 MHz	$I_o - 4.13 \text{ dB} = loc$, Note 1	$I_o - 4.13 \text{ dB} = loc$, Note 1
Range 1: I_o Range 2: I_o	dBm/ 3.84 MHz	-94...-70 -94...-50	-94...-70 -94...-50
Propagation condition	-	AWGN	
NOTE 1: I_o level shall be adjusted according the total signal power I_o at receiver input and the geometry factor \hat{I}_{or}/loc .			

A.9.1.3.2 Test Requirements

The UTRA Carrier RSSI measurement accuracy shall meet the requirements in section 9.1.3.

A.9.1.3A GSM Carrier RSSI

A.9.1.3A.1 Test Purpose and Environment

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

In the test in Cell DCH state compressed mode with purpose "GSM Carrier RSSI Measurement" is applied to measure on GSM. The gap length is 7, detailed definition is in TS 25.101 annex A.5. Table A.9.X defines the limits of signal strengths and code powers on the UMTS FDD cell, where the requirement is applicable. In the measurement control information it is indicated to the UE that periodic reporting of the GSM RSSI measurement.

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

Table A.9.x1: General GSM Carrier RSSI test parameters

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

Table A.9.x2: Cell specific GSM Carrier RSSI test parameters

<u>Parameter</u>	<u>Unit</u>	<u>Cell 1</u>
<u>UTRA RF Channel number</u>	<u>-</u>	<u>Channel 1</u>
<u>lor/loc</u>	<u>dB</u>	<u>-1</u>
<u>loc</u>	<u>dBm/ 3.84 MHz</u>	<u>-70</u>
<u>Propagation condition</u>	<u>-</u>	<u>AWGN</u>

A.9.1.3A.2 Test Requirements

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

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

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

CR-Form-v4

CHANGE REQUEST⌘ **TS25.133** CR 148 ⌘ 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 Core Network

Title:	⌘ Transport Channel BER accuracy requirement		
Source:	⌘ RAN WG4		
Work item code:	⌘	Date:	⌘ 3 September 2001
Category:	⌘ F	Release:	⌘ Rel99
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	R96 (Release 1996)	2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R97 (Release 1997)	R96 (Release 1996)
	B (addition of feature),	R98 (Release 1998)	R97 (Release 1997)
	C (functional modification of feature)	R99 (Release 1999)	R98 (Release 1998)
	D (editorial modification)	REL-4 (Release 4)	R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.	REL-5 (Release 5)	

Reason for change:	⌘ There is one incorrect table reference in the accuracy requirement clause.
Summary of change:	⌘ Correct the table reference in the accuracy requirement clause.
Consequences if not approved:	⌘ The accuracy requirement will be ambiguous.

Clauses affected:	⌘ 9.2.9.1
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘

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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.

9.2.9.1 Accuracy requirement

The average of consecutive Transport channel BER measurements is required to fulfil the accuracy stated in table 9.51 ~~9.49~~ 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 9.51.

Table 9.51

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 ≤ 15% Convolutional coding 1/2 with any amount of repetition or no puncturing: for absolute BER value ≤ 15% Turbo coding 1/3 rd with any amount of repetition or a maximum of 20% puncturing: for absolute BER value ≤ 15%.

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

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CHANGE REQUEST⌘ **TS25.133** **CR** 149 ⌘ ev **-** ⌘ Current version: **4.1.0** ⌘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 Core Network

Title:	⌘ Transport Channel BER accuracy requirement		
Source:	⌘ RAN WG4		
Work item code:	⌘	Date:	⌘ 3 September 2001
Category:	⌘ A	Release:	⌘ Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	R96 (Release 1996)	2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R97 (Release 1997)	R98 (Release 1998)
	B (addition of feature),	R99 (Release 1999)	REL-4 (Release 4)
	C (functional modification of feature)	REL-5 (Release 5)	
	D (editorial modification)		
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ There is one incorrect table reference in the accuracy requirement clause.
Summary of change:	⌘ Correct the table reference in the accuracy requirement clause.
Consequences if not approved:	⌘ The accuracy requirement will be ambiguous.

Clauses affected:	⌘ 9.2.9.1
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘

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9.2.9.1 Accuracy requirement

The average of consecutive Transport channel BER measurements is required to fulfil the accuracy stated in table 9.51 ~~9.49~~ 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 9.51.

Table 9.51

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 ≤ 15% Convolutional coding 1/2 with any amount of repetition or no puncturing: for absolute BER value ≤ 15% Turbo coding 1/3 rd with any amount of repetition or a maximum of 20% puncturing: for absolute BER value ≤ 15%.

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

CR-Form-v4

CHANGE REQUEST⌘ **25.133** **CR 150** ⌘ 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 Core Network

Title:	⌘ Clarification to Requirement classification for statistical testing
Source:	⌘ RAN WG4
Work item code:	⌘ Date: ⌘ 2001-09-01
Category:	⌘ 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 IR 21.900 .
Release:	⌘ Rel99
	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:	⌘ Handover delay and TFC blocking delay test cases were introduced. Also for these requirements the success rate of 90% shall be applied, as stated in the tests. For consistency it is proposed to include also these requirements in the requirement classification section. As there is no requirement on cell selection it is proposed to delete this from the requirement classification.
Summary of change:	⌘ Inclusion of handover delay and TFC blocking delay and deletion of the cell selection delay in the requirement classification section.
Consequences if not approved:	⌘ Inconsistency within TS25.133.

Clauses affected:	⌘ A.2.1
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications
	<input type="checkbox"/> Test specifications
	<input type="checkbox"/> O&M Specifications
Other comments:	⌘

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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

Editors note: Each requirement in the annex have to be gone through and updated with which type it belongs to and in applicable cases, which success rate that defines the requirement. Tdoc R4 00 619 shall be used as a base for that work.

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 25.133. The details of the tests, how many times to run it and how to establish confidence in the tests are described in TS 34.121. 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 25.133

Time and delay requirements on UE higher layer actions

A very large 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 ~~and TFC blocking 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 34.121.

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 $\pm 3.29\sigma$ 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 the limits, in a way similar to the requirements on delay.

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" and "Active set dimension" in UTRAN Connected Mode Mobility (A.5)
- "Correct behaviour at time-out" in RRC connection control (A.6)

Physical layer timing requirements

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

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 25.101.

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.

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

CR-Form-v4

CHANGE REQUEST
 ⌘ **25.133** **CR 151** ⌘ ev **-** ⌘ Current version: **4.1.0** ⌘

 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 Core Network

Title:	⌘ Clarification to Requirement classification for statistical testing
Source:	⌘ RAN WG4
Work item code:	⌘ Date: ⌘ 2001-09-01
Category:	⌘ A
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 IR 21.900 .	
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 CAT A CR to R4-011108. Handover delay and TFC blocking delay test cases were introduced. Also for these requirements the success rate of 90% shall be applied, as stated in the tests. For consistency it is proposed to include also these requirements in the requirement classification section.
Summary of change:	⌘ Inclusion of handover delay and TFC blocking delay in the requirement classification section.
Consequences if not approved:	⌘ Inconsistency within TS25.133.

Clauses affected:	⌘ A.2.1
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications ⌘ <input type="checkbox"/> O&M Specifications ⌘
Other comments:	⌘

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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

Editors note: Each requirement in the annex have to be gone through and updated with which type it belongs to and in applicable cases, which success rate that defines the requirement. Tdoc R4 00 619 shall be used as a base for that work.

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 25.133. The details of the tests, how many times to run it and how to establish confidence in the tests are described in TS 34.121. 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 25.133

Time and delay requirements on UE higher layer actions

A very large 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 and TFC blocking 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 34.121.

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 $\pm 3.29\sigma$ 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 the limits, in a way similar to the requirements on delay.

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" and "Active set dimension" in UTRAN Connected Mode Mobility (A.5)
- "Correct behaviour at time-out" in RRC connection control (A.6)

Physical layer timing requirements

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

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 25.101.

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.

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

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR 152** ⌘ 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 Core Network

Title: ⌘ Correction to FDD/TDD cell re-selection test case

Source: ⌘ RAN WG4

Work item code: ⌘ **Date:** ⌘ 2001-09-01

Category: ⌘ **F** **Release:** ⌘ Rel99

<p>Use <u>one</u> of the following categories:</p> <p>F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP IR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>
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Reason for change: ⌘ Incorrect test case for FDD/TDD cell re-selection, parameters are missing.

Summary of change: ⌘ Addition of parameters, updating of the current values accordingly, deletion of statement on the use of mapping functions.

Consequences if not approved: ⌘ Incorrect test case.

Clauses affected: ⌘ A.4.4

Other specs affected: ⌘ Other core specifications ⌘ Test specifications ⌘ 34.121
 O&M Specifications

Other comments: ⌘

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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.4.4 FDD/TDD cell re-selection

A.4.4.1 Test Purpose and Environment

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

This scenario implies the presence of 1 FDD and 1 TDD cell as given in Table A.4.8 and 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 FDD cell 1 is better ranked as the TDD cell 2 during T1 and the TDD cell 2 is better ranked than the FDD cell 1, indicating a cell re-selection according to section 4.2.2.4 during T2.~~

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

Table A.4.8: General test parameters for the FDD/TDD cell re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	FDD cell
	Neighbour cells		Cell2	TDD cell
Final condition	Active cell		Cell2	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
I_{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	Cell 1 better ranked than cell 2
T2		s	15	Cell2 better ranked than cell 1

Table A.4.9: FDD/TDD cell re-selection

Parameter	Unit	Cell 1		Cell 2			
		n.a	n.a.	0		8	
Timeslot Number							
		T 1	T 2	T1	T2	T 1	T 2
UTRA RF Channel Number		Channel 1		Channel 2			
CPICH_Ec/lor	dB	-10	-10	n.a.		n.a.	
PCCPCH_Ec/lor	dB	-12	-12	-3	-3		
SCH_Ec/lor	dB	-12	-12	-9	-9	-9	-9
SCH_t_offset		n.a.	n.a.	0	0	0	0
PICH_Ec/lor		-15	-15			-3	-3
OCNS	dB	-0,941	-0,941	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	3	-52	-2	36	-2	36
I_{oc}	dBm/3.84 MHz	-70					
CPICH_RSCP	dBm	-77	-852	n.a.		n.a.	
PCCPCH_RSCP	dBm	n.a.	n.a.	-75	-7967		
Cell_reselection_and_quality_measure		CPICH_RSCP					
Qrxlevmin	dBm	-115		-103			
Qoffset 1s,n	dB	C1,C2:+12		C2,-C1:-12			
Qhyst 1s	dB	0		0			
Treselection	s	0		0			
Sintersearch	dB	0		0			
Propagation Condition		AWGN		AWGN			

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

A.4.4.2 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 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: $T_{\text{evaluateTDD}} + T_{\text{SI}}$, where:

$T_{\text{evaluateTDD}}$: A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ 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.

CHANGE REQUEST

⌘ **25.133** CR **153** ⌘ ev **-** ⌘ Current version: **4.1.0** ⌘

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 Core Network

Title:	⌘ Correction to FDD/TDD cell re-selection test case		
Source:	⌘ RAN WG4		
Work item code:	⌘	Date:	⌘ 2001-09-01
Category:	⌘ A	Release:	⌘ Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can	REL-4	(Release 4)
	be found in 3GPP IR 21.900 .	REL-5	(Release 5)

Reason for change:	⌘ Corresponding REL-4 CAT A CR to R4-011108. Incorrect test case for FDD/TDD cell re-selection, parameters are missing.
Summary of change:	⌘ Addition of parameters, updating of the current values accordingly, deletion of statement on the use of mapping functions.
Consequences if not approved:	⌘ Inconsistency between Releases. Incorrect test case.

Clauses affected:	⌘ A.4.4
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘
	<input checked="" type="checkbox"/> Test specifications ⌘ 34.121
	<input type="checkbox"/> O&M Specifications
Other comments:	⌘

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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.4.4 FDD/TDD cell re-selection

A.4.4.1 Test Purpose and Environment

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

This scenario implies the presence of 1 FDD and 1 TDD cell as given in Table A.4.8 and 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 FDD cell 1 is better ranked as the TDD cell 2 during T1 and the TDD cell 2 is better ranked than the FDD cell 1, indicating a cell re-selection according to section 4.2.2.4 during T2.~~

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

Table A.4.8: General test parameters for the FDD/TDD cell re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	FDD cell
	Neighbour cells		Cell2	TDD cell
Final condition	Active cell		Cell2	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
I_{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	Cell 1 better ranked than cell 2
T2		s	15	Cell2 better ranked than cell 1

Table A.4.9: FDD/TDD cell re-selection

Parameter	Unit	Cell 1		Cell 2			
		n.a	n.a.	0		8	
Timeslot Number							
		T 1	T 2	T1	T2	T 1	T 2
UTRA RF Channel Number		Channel 1		Channel 2			
CPICH_Ec/lor	dB	-10	-10	n.a.		n.a.	
PCCPCH_Ec/lor	dB	-12	-12	-3	-3		
SCH_Ec/lor	dB	-12	-12	-9	-9	-9	-9
SCH_t_offset		n.a.	n.a.	0	0	0	0
PICH_Ec/lor		-15	-15			-3	-3
OCNS	dB	-0,941	-0,941	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	3	-52	-2	36	-2	36
I_{oc}	dBm/3.84 MHz	-70					
CPICH_RSCP	dBm	-77	-852	n.a.		n.a.	
PCCPCH_RSCP	dBm	n.a.	n.a.	-75	-7967		
Cell_reselection_and_quality_measure		CPICH_RSCP					
Qrxlevmin	dBm	-115		-103			
Qoffset 1s,n	dB	C1,C2:+12		C2-,C1:-12			
Qhyst 1s	dB	0		0			
Treselection	s	0		0			
Sintersearch	dB	0		0			
Propagation Condition		AWGN		AWGN			

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

A.4.4.2 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 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: $T_{\text{evaluateTDD}} + T_{\text{SI}}$, where:

$T_{\text{evaluateTDD}}$: A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluate TDD}}$ 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.

CHANGE REQUEST

⌘ **25.133 CR 154** ⌘ 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 Core Network

Title:	⌘ Editorial corrections to UTRAN measurements in section 9.2		
Source:	⌘ RAN WG4		
Work item code:	⌘	Date:	⌘ 2001-08-23
Category:	⌘ F	Release:	⌘ Rel99
	Use <u>one</u> of the following categories:		Use <u>one</u> 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-4 (Release 4)
			REL-5 (Release 5)

Reason for change:	⌘ - There is a note in section 9.2.1 saying that the accuracy requirements and conditions needs to be revised when WG1 has defined the Received Total Wideband Power (RTWP) in 25.215. As WG1 has defined RTWP since a quite long time ago in 25.215 and it is believed that the existing accuracy values in 25.133 are appropriate it is proposed to remove the note. - Brackets for the RTWP relative accuracy and measurements periods in section 9.2 have been there for a long time and the values have not been questioned.
Summary of change:	⌘ - Removal of note and brackets in section 9.2.1 - Bracket removal for measurement periods in section 9.2
Consequences if not approved:	⌘ Note saying that the measurement accuracy values needs to be revised and brackets around measurement periods will still be present in section 9.2.

Clauses affected:	⌘ 9.2
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘

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9.2 Measurements Performance for UTRAN

The reported measurement result after layer 1 filtering shall be an estimate of the average value of the measured quantity over the measurement period. The reference point for the measurement result after layer 1 filtering is referred to as point B in the measurement model described in TS 25.302.

The accuracy requirements in this clause are valid for the reported measurement result after layer 1 filtering. The accuracy requirements are verified from the measurement report at point D in the measurement model having the layer 3 filtering disabled.

9.2.1 Received total wideband power

The measurement period shall be {100} ms.

9.2.1.1 Absolute accuracy requirement

Table 9.35

Parameter	Unit	Accuracy [dB]	Conditions
			Range
lo	dBm	± 4	$-103 \leq lo \leq -74$ dBm

9.2.1.2 Relative accuracy requirement

The relative accuracy is defined as the Received total wideband power measured at one frequency compared to the Received total wideband power measured from the same frequency at a different time.

~~NOTE: The accuracy requirement and the conditions in table 9.36 to needs to be revised when the definition of the UTRAN RSSI measurement is decided within WGI.~~

Table 9.36

Parameter	Unit	Accuracy [dB]	Conditions
			Range
lo	dBm	$\pm \{0.5\}$	For changes $\leq \pm 5.0$ dB and $-103 \leq lo \leq -74$ dBm

9.2.1.3 Received total wideband power measurement report mapping

The reporting range for *Received total wideband power (RTWP)* is from -112 ... -50 dBm.

In table 9.37 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.37

Reported value	Measured quantity value	Unit
RTWP_LEV_000	$RTWP < -112.0$	dBm
RTWP_LEV_001	$-112.0 \leq RTWP < -111.9$	dBm
RTWP_LEV_002	$-111.9 \leq RTWP < -111.8$	dBm
...
RTWP_LEV_619	$-50.2 \leq RTWP < -50.1$	dBm
RTWP_LEV_620	$-50.1 \leq RTWP < -50.0$	dBm
RTWP_LEV_621	$-50.0 \leq RTWP$	dBm

9.2.2 SIR

The measurement period shall be 80 ms.

9.2.2.1 Accuracy requirement

Table 9.38

Parameter	Unit	Accuracy [dB]	Conditions
			Range
SIR	dB	± 3	For $-7 < \text{SIR} < 20$ dB when $l_0 > -105$ dBm

9.2.2.2 SIR measurement report mapping

The reporting range for *SIR* is from -11 ... 20 dB.

In table 9.39 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.39

Reported value	Measured quantity value	Unit
UTRAN_SIR_00	$\text{SIR} < -11.0$	dB
UTRAN_SIR_01	$-11.0 \leq \text{SIR} < -10.5$	dB
UTRAN_SIR_02	$-10.5 \leq \text{SIR} < -10.0$	dB
...
UTRAN_SIR_61	$19.0 \leq \text{SIR} < 19.5$	dB
UTRAN_SIR_62	$19.5 \leq \text{SIR} < 20.0$	dB
UTRAN_SIR_63	$20.0 \leq \text{SIR}$	dB

9.2.3 $\text{SIR}_{\text{error}}$

The measurement period shall be 80 ms.

NOTE: The measurement period is the same as for the SIR measurement in section 8.2.2. $\text{SIR}_{\text{error}}$ is calculated from SIR and $\text{SIR}_{\text{target}}$, see TS 25.215.

9.2.3.1 Accuracy requirement

Table 9.40

Parameter	Accuracy	Range
$\text{SIR}_{\text{error}}$	± 3 dB	The accuracy requirement for $\text{SIR}_{\text{error}}$ is valid for SIR within the guaranteed accuracy range specified in section 8.2.2.

NOTE: The accuracy requirement for $\text{SIR}_{\text{error}}$ is the same as for the SIR measurement specified in section 8.2.2. $\text{SIR}_{\text{error}}$ is calculated from SIR and $\text{SIR}_{\text{target}}$, see TS 25.215.

9.2.3.2 $\text{SIR}_{\text{error}}$ measurement report mapping

The reporting range for $\text{SIR}_{\text{error}}$ is from -31 ... 31 dB.

In table 9.41 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.41

Reported value	Measured quantity value	Unit
UTRAN_SIR_ERROR_000	$SIR_{error} < -31.0$	dB
UTRAN_SIR_ERROR_001	$-31.0 \leq SIR_{error} < -30.5$	dB
UTRAN_SIR_ERROR_002	$-30.5 \leq SIR_{error} < -30.0$	dB
...
UTRAN_SIR_ERROR_062	$-0.5 \leq SIR_{error} < 0.0$	dB
UTRAN_SIR_ERROR_063	$0.0 \leq SIR_{error} < 0.5$	dB
...
UTRAN_SIR_ERROR_123	$30.0 \leq SIR_{error} < 30.5$	dB
UTRAN_SIR_ERROR_124	$30.5 \leq SIR_{error} < 31.0$	dB
UTRAN_SIR_ERROR_125	$31.0 \leq SIR_{error}$	dB

9.2.4 Transmitted carrier power

The measurement period shall be $\{100\}$ ms.

9.2.4.1 Accuracy requirement

Table 9.42

Parameter	Unit	Accuracy [% units]	Conditions
			Range
Ptot	%	± 5	For $5\% \leq$ Transmitted carrier power $\leq 95\%$

9.2.4.2 Transmitted carrier power measurement report mapping

The reporting range for *Transmitted carrier power* is from 0 ... 100 %.

In table 9.43 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.43

Reported value	Measured quantity value	Unit
UTRAN_TX_POWER_000	Transmitted carrier power = 0	%
UTRAN_TX_POWER_001	$0 < \text{Transmitted carrier power} \leq 1$	%
UTRAN_TX_POWER_002	$1 < \text{Transmitted carrier power} \leq 2$	%
UTRAN_TX_POWER_003	$2 < \text{Transmitted carrier power} \leq 3$	%
...
UTRAN_TX_POWER_098	$97 < \text{Transmitted carrier power} \leq 98$	%
UTRAN_TX_POWER_099	$98 < \text{Transmitted carrier power} \leq 99$	%
UTRAN_TX_POWER_100	$99 < \text{Transmitted carrier power} \leq 100$	%

9.2.5 Transmitted code power

The measurement period shall be $\{100\}$ ms.

9.2.5.1 Absolute accuracy requirement

Table 9.44

Parameter	Unit	Accuracy [dB]	Conditions
			Range
Pcode	dBm	± 3	Over the full range

9.2.5.2 Relative accuracy requirement

The relative accuracy of Transmitted code power is defined as the Transmitted code power measured at one dedicated radio link compared to the Transmitted code power measured from a different dedicated radio link in the same cell.

Table 9.45

Parameter	Unit	Accuracy [dB]	Conditions
			Range
Pcode	dBm	± 2	Over the full range

9.2.5.3 Transmitted code power measurement report mapping

The reporting range for *Transmitted code power* is from -10 ... 46 dBm.

In table 9.46 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.46

Reported value	Measured quantity value	Unit
UTRAN_CODE_POWER_010	$-10.0 \leq \text{Transmitted code power} < -9.5$	dBm
UTRAN_CODE_POWER_011	$-9.5 \leq \text{Transmitted code power} < -9.0$	dBm
UTRAN_CODE_POWER_012	$-9.0 \leq \text{Transmitted code power} < -8.5$	dBm
...
UTRAN_CODE_POWER_120	$45.0 \leq \text{Transmitted code power} < 45.5$	dBm
UTRAN_CODE_POWER_121	$45.5 \leq \text{Transmitted code power} < 46.0$	dBm
UTRAN_CODE_POWER_122	$46.0 \leq \text{Transmitted code power} < 46.5$	dBm

9.2.6 (void)

9.2.7 Physical channel BER

The measurement period shall be equal to the TTI of the transport channel, to which the Physical channel BER is associated via the IE QE-Selector, see TS 25.433. Each reported Physical channel BER measurement shall be an estimate of the BER averaged over one measurement period only.

9.2.7.1 Accuracy requirement

The average of consecutive Physical channel BER measurements is required to fulfil the accuracy stated in table 9.47 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 9.47.

Table 9.47

Parameter	Unit	Accuracy [% of absolute BER value]	Conditions
			Range
PhyBER	-	+/- 10	for absolute BER value $\leq 30\%$

9.2.7.2 Physical channel BER measurement report mapping

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

In table 9.48 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.48

Reported value	Measured quantity value	Unit
PhCh_BER_LOG_000	Physical channel BER = 0	-
PhCh_BER_LOG_001	$-\infty < \text{Log}_{10}(\text{Physical channel BER}) < -2.06375$	-
PhCh_BER_LOG_002	$-2.06375 \leq \text{Log}_{10}(\text{Physical channel BER}) < -2.055625$	-
PhCh_BER_LOG_003	$-2.055625 \leq \text{Log}_{10}(\text{Physical channel BER}) < -2.0475$	-
...
PhCh_BER_LOG_253	$-0.024375 \leq \text{Log}_{10}(\text{Physical channel BER}) < -0.01625$	-
PhCh_BER_LOG_254	$-0.01625 \leq \text{Log}_{10}(\text{Physical channel BER}) < -0.008125$	-
PhCh_BER_LOG_255	$-0.008125 \leq \text{Log}_{10}(\text{Physical channel BER}) \leq 0$	-

9.2.8 Round trip time

The measurement period shall be ~~100~~ ms.

9.2.8.1 Absolute accuracy requirement

Table 9.49

Parameter	Unit	Accuracy [chip]	Conditions
			Range [chips]
RTT	chip	+/- 0.5	876, ..., 2923.50

9.2.8.2 Round trip time measurement report mapping

The *Round trip time* reporting range is from 876.0000 ... 2923.8750 chip.

In table 9.50 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.50

Reported value	Measured quantity value	Unit
RT_TIME_0000	Round trip time < 876.0000	chip
RT_TIME_0001	$876.0000 \leq \text{Round trip time} < 876.0625$	chip
RT_TIME_0002	$876.0625 \leq \text{Round trip time} < 876.1250$	chip
RT_TIME_0003	$876.1250 \leq \text{Round trip time} < 876.1875$	chip
...
RT_TIME_32764	$2922.6875 \leq \text{Round trip time} < 2923.7500$	chip
RT_TIME_32765	$2923.7500 \leq \text{Round trip time} < 2923.8125$	chip
RT_TIME_32766	$2923.8125 \leq \text{Round trip time} < 2923.8750$	chip
RT_TIME_32767	$2923.8750 \leq \text{Round trip time}$	chip

CHANGE REQUEST

⌘ **25.133 CR 155** ⌘ ev **-** ⌘ Current version: **4.1.0** ⌘

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 Core Network

Title:	⌘ Editorial corrections to UTRAN measurements in section 9.2
Source:	⌘ RAN WG4
Work item code:	⌘ Date: ⌘ 2001-09-04
Category:	⌘ A
	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 TR 21.900 .
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:	⌘ - There is a note in section 9.2.1 saying that the accuracy requirements and conditions needs to be revised when WG1 has defined the Received Total Wideband Power (RTWP) in 25.215. As WG1 has defined RTWP since a quite long time ago in 25.215 and it is believed that the existing accuracy values in 25.133 are appropriate it is proposed to remove the note. - Brackets for the RTWP relative accuracy and measurements periods in section 9.2 have been there for a long time and the values have not been questioned.
Summary of change:	⌘ - Removal of note and brackets in section 9.2.1 - Bracket removal for measurement periods in section 9.2
Consequences if not approved:	⌘ Note saying that the measurement accuracy values needs to be revised and brackets around measurement periods will still be present in section 9.2.

Clauses affected:	⌘ 9.2
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘ Corresponding R99 CR in R4-011139

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. 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 <ftp://ftp.3gpp.org/specs/> 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 Measurements Performance for UTRAN

The reported measurement result after layer 1 filtering shall be an estimate of the average value of the measured quantity over the measurement period. The reference point for the measurement result after layer 1 filtering is referred to as point B in the measurement model described in TS 25.302.

The accuracy requirements in this clause are valid for the reported measurement result after layer 1 filtering. The accuracy requirements are verified from the measurement report at point D in the measurement model having the layer 3 filtering disabled.

9.2.1 Received total wideband power

The measurement period shall be {100} ms.

9.2.1.1 Absolute accuracy requirement

Table 9.35

Parameter	Unit	Accuracy [dB]	Conditions
			Range
lo	dBm	± 4	$-103 \leq lo \leq -74$ dBm

9.2.1.2 Relative accuracy requirement

The relative accuracy is defined as the Received total wideband power measured at one frequency compared to the Received total wideband power measured from the same frequency at a different time.

~~NOTE: The accuracy requirement and the conditions in table 9.36 to needs to be revised when the definition of the UTRAN RSSI measurement is decided within WGI.~~

Table 9.36

Parameter	Unit	Accuracy [dB]	Conditions
			Range
lo	dBm	$\pm \{0.5\}$	For changes $\leq \pm 5.0$ dB and $-103 \leq lo \leq -74$ dBm

9.2.1.3 Received total wideband power measurement report mapping

The reporting range for *Received total wideband power (RTWP)* is from -112 ... -50 dBm.

In table 9.37 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.37

Reported value	Measured quantity value	Unit
RTWP_LEV_000	$RTWP < -112.0$	dBm
RTWP_LEV_001	$-112.0 \leq RTWP < -111.9$	dBm
RTWP_LEV_002	$-111.9 \leq RTWP < -111.8$	dBm
...
RTWP_LEV_619	$-50.2 \leq RTWP < -50.1$	dBm
RTWP_LEV_620	$-50.1 \leq RTWP < -50.0$	dBm
RTWP_LEV_621	$-50.0 \leq RTWP$	dBm

9.2.2 SIR

The measurement period shall be 80 ms.

9.2.2.1 Accuracy requirement

Table 9.38

Parameter	Unit	Accuracy [dB]	Conditions
			Range
SIR	dB	± 3	For $-7 < \text{SIR} < 20$ dB when $l_0 > -105$ dBm

9.2.2.2 SIR measurement report mapping

The reporting range for *SIR* is from -11 ... 20 dB.

In table 9.39 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.39

Reported value	Measured quantity value	Unit
UTRAN_SIR_00	$\text{SIR} < -11.0$	dB
UTRAN_SIR_01	$-11.0 \leq \text{SIR} < -10.5$	dB
UTRAN_SIR_02	$-10.5 \leq \text{SIR} < -10.0$	dB
...
UTRAN_SIR_61	$19.0 \leq \text{SIR} < 19.5$	dB
UTRAN_SIR_62	$19.5 \leq \text{SIR} < 20.0$	dB
UTRAN_SIR_63	$20.0 \leq \text{SIR}$	dB

9.2.3 $\text{SIR}_{\text{error}}$

The measurement period shall be 80 ms.

NOTE: The measurement period is the same as for the SIR measurement in section 8.2.2. $\text{SIR}_{\text{error}}$ is calculated from SIR and $\text{SIR}_{\text{target}}$, see TS 25.215.

9.2.3.1 Accuracy requirement

Table 9.40

Parameter	Accuracy	Range
$\text{SIR}_{\text{error}}$	± 3 dB	The accuracy requirement for $\text{SIR}_{\text{error}}$ is valid for SIR within the guaranteed accuracy range specified in section 8.2.2.

NOTE: The accuracy requirement for $\text{SIR}_{\text{error}}$ is the same as for the SIR measurement specified in section 8.2.2. $\text{SIR}_{\text{error}}$ is calculated from SIR and $\text{SIR}_{\text{target}}$, see TS 25.215.

9.2.3.2 $\text{SIR}_{\text{error}}$ measurement report mapping

The reporting range for $\text{SIR}_{\text{error}}$ is from -31 ... 31 dB.

In table 9.41 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.41

Reported value	Measured quantity value	Unit
UTRAN_SIR_ERROR_000	$SIR_{error} < -31.0$	dB
UTRAN_SIR_ERROR_001	$-31.0 \leq SIR_{error} < -30.5$	dB
UTRAN_SIR_ERROR_002	$-30.5 \leq SIR_{error} < -30.0$	dB
...
UTRAN_SIR_ERROR_062	$-0.5 \leq SIR_{error} < 0.0$	dB
UTRAN_SIR_ERROR_063	$0.0 \leq SIR_{error} < 0.5$	dB
...
UTRAN_SIR_ERROR_123	$30.0 \leq SIR_{error} < 30.5$	dB
UTRAN_SIR_ERROR_124	$30.5 \leq SIR_{error} < 31.0$	dB
UTRAN_SIR_ERROR_125	$31.0 \leq SIR_{error}$	dB

9.2.4 Transmitted carrier power

The measurement period shall be $\{100\}$ ms.

9.2.4.1 Accuracy requirement

Table 9.42

Parameter	Unit	Accuracy [% units]	Conditions
			Range
Ptot	%	± 5	For $5\% \leq$ Transmitted carrier power $\leq 95\%$

9.2.4.2 Transmitted carrier power measurement report mapping

The reporting range for *Transmitted carrier power* is from 0 ... 100 %.

In table 9.43 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.43

Reported value	Measured quantity value	Unit
UTRAN_TX_POWER_000	Transmitted carrier power = 0	%
UTRAN_TX_POWER_001	$0 < \text{Transmitted carrier power} \leq 1$	%
UTRAN_TX_POWER_002	$1 < \text{Transmitted carrier power} \leq 2$	%
UTRAN_TX_POWER_003	$2 < \text{Transmitted carrier power} \leq 3$	%
...
UTRAN_TX_POWER_098	$97 < \text{Transmitted carrier power} \leq 98$	%
UTRAN_TX_POWER_099	$98 < \text{Transmitted carrier power} \leq 99$	%
UTRAN_TX_POWER_100	$99 < \text{Transmitted carrier power} \leq 100$	%

9.2.5 Transmitted code power

The measurement period shall be $\{100\}$ ms.

9.2.5.1 Absolute accuracy requirement

Table 9.44

Parameter	Unit	Accuracy [dB]	Conditions
			Range
Pcode	dBm	± 3	Over the full range

9.2.5.2 Relative accuracy requirement

The relative accuracy of Transmitted code power is defined as the Transmitted code power measured at one dedicated radio link compared to the Transmitted code power measured from a different dedicated radio link in the same cell.

Table 9.45

Parameter	Unit	Accuracy [dB]	Conditions
			Range
Pcode	dBm	± 2	Over the full range

9.2.5.3 Transmitted code power measurement report mapping

The reporting range for *Transmitted code power* is from -10 ... 46 dBm.

In table 9.46 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.46

Reported value	Measured quantity value	Unit
UTRAN_CODE_POWER_010	$-10.0 \leq \text{Transmitted code power} < -9.5$	dBm
UTRAN_CODE_POWER_011	$-9.5 \leq \text{Transmitted code power} < -9.0$	dBm
UTRAN_CODE_POWER_012	$-9.0 \leq \text{Transmitted code power} < -8.5$	dBm
...
UTRAN_CODE_POWER_120	$45.0 \leq \text{Transmitted code power} < 45.5$	dBm
UTRAN_CODE_POWER_121	$45.5 \leq \text{Transmitted code power} < 46.0$	dBm
UTRAN_CODE_POWER_122	$46.0 \leq \text{Transmitted code power} < 46.5$	dBm

9.2.6 (void)

9.2.7 Physical channel BER

The measurement period shall be equal to the TTI of the transport channel, to which the Physical channel BER is associated via the IE QE-Selector, see TS 25.433. Each reported Physical channel BER measurement shall be an estimate of the BER averaged over one measurement period only.

9.2.7.1 Accuracy requirement

The average of consecutive Physical channel BER measurements is required to fulfil the accuracy stated in table 9.47 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 9.47.

Table 9.47

Parameter	Unit	Accuracy [% of absolute BER value]	Conditions
			Range
PhyBER	-	+/- 10	for absolute BER value $\leq 30\%$

9.2.7.2 Physical channel BER measurement report mapping

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

In table 9.48 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.48

Reported value	Measured quantity value	Unit
PhCh_BER_LOG_000	Physical channel BER = 0	-
PhCh_BER_LOG_001	$-\infty < \text{Log}_{10}(\text{Physical channel BER}) < -2.06375$	-
PhCh_BER_LOG_002	$-2.06375 \leq \text{Log}_{10}(\text{Physical channel BER}) < -2.055625$	-
PhCh_BER_LOG_003	$-2.055625 \leq \text{Log}_{10}(\text{Physical channel BER}) < -2.0475$	-
...
PhCh_BER_LOG_253	$-0.024375 \leq \text{Log}_{10}(\text{Physical channel BER}) < -0.01625$	-
PhCh_BER_LOG_254	$-0.01625 \leq \text{Log}_{10}(\text{Physical channel BER}) < -0.008125$	-
PhCh_BER_LOG_255	$-0.008125 \leq \text{Log}_{10}(\text{Physical channel BER}) \leq 0$	-

9.2.8 Round trip time

The measurement period shall be ~~100~~ ms.

9.2.8.1 Absolute accuracy requirement

Table 9.49

Parameter	Unit	Accuracy [chip]	Conditions
			Range [chips]
RTT	chip	+/- 0.5	876, ..., 2923.50

9.2.8.2 Round trip time measurement report mapping

The *Round trip time* reporting range is from 876.0000 ... 2923.8750 chip.

In table 9.50 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.50

Reported value	Measured quantity value	Unit
RT_TIME_0000	Round trip time < 876.0000	chip
RT_TIME_0001	$876.0000 \leq \text{Round trip time} < 876.0625$	chip
RT_TIME_0002	$876.0625 \leq \text{Round trip time} < 876.1250$	chip
RT_TIME_0003	$876.1250 \leq \text{Round trip time} < 876.1875$	chip
...
RT_TIME_32764	$2922.6875 \leq \text{Round trip time} < 2923.7500$	chip
RT_TIME_32765	$2923.7500 \leq \text{Round trip time} < 2923.8125$	chip
RT_TIME_32766	$2923.8125 \leq \text{Round trip time} < 2923.8750$	chip
RT_TIME_32767	$2923.8750 \leq \text{Round trip time}$	chip

CHANGE REQUEST

⌘ **TS25.133 CR 156** ⌘ rev **-** ⌘ 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 Core Network

Title:	⌘ RACH reporting
Source:	⌘ RAN WG4
Work item code:	⌘ Date: ⌘ 30-08-2001
Category:	⌘ F Release: ⌘ Rel99
<p>Use <u>one</u> of the following categories:</p> <p>F (correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	
<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>	

Reason for change:	⌘ The Tdoc R4-010986 was endorsed in the RAN WG4 meeting#18 in Berlin. However, one clarification to the requirement would still be beneficial to avoid misunderstanding.
Summary of change:	⌘ A modification compared to R4-010986 is in the second bullet: "has been reported" is changed to "is to be reported".
Consequences if not approved:	⌘ Without the requirement similar behaviour cannot be ensured between different terminals in case of RACH reporting.

Clauses affected:	⌘ 5.8, 5.8.1 and 5.8.2
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> Test specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> O&M Specifications ⌘ <input type="checkbox"/>
Other comments:	⌘

5.6 Cell Re-selection in CELL_PCH

5.6.1 Introduction

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

5.6.2 Requirements

Requirements for cell re-selection in CELL_PCH are the same as for cell re-selection in idle mode, see section 4.2. UE shall support all DRX cycle lengths in table 4.1, according to [16].

5.7 Cell Re-selection in URA_PCH

5.7.1 Introduction

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

5.7.2 Requirements

Requirements for cell re-selection in CELL_PCH are the same as for cell re-selection in idle mode, see section 4.2. UE shall support all DRX cycle lengths in table 4.1, according to [16].

5.8 RACH reporting

5.8.1 Introduction

The network may request the UE to report on RACH cell CPICH levels for the serving cell and up to 6 strongest monitored set cells and SFN-SFN observed time difference between the serving cell and up to 6 different monitored set cells.

5.8.2 Requirements

If all of the following conditions are true, the UE is allowed to have an additional delay of $N_{RACH} \cdot 50$ ms in RACH transmission compared to the normal RACH transmission delay.

- SFN-SFN observed time difference measurement results are required to be reported on RACH
- The set of cells on which the SFN-SFN observed time difference measurement is to be reported has not changed since the previous RACH measurement report
- The UE has not measured the SFN-SFN observed time differences for the cells to be reported on RACH in the CELL_FACH state according to the requirements defined in Section 8.4.2.2

If at least one of the previous conditions is false, the UE shall be able to report the requested measurement results on RACH within a normal RACH transmission delay.

N_{RACH} is the number of cells requiring SFN decoding prior to the reporting of SFN-SFN observed time difference measurement results on RACH.

CHANGE REQUEST

⌘ **TS25.133 CR 157** ⌘ rev **-** ⌘ Current version: **4.1.0** ⌘

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 Core Network

Title:	⌘ RACH reporting
Source:	⌘ RAN WG4
Work item code:	⌘ Date: ⌘ 2001-09-04
Category:	⌘ A Release: ⌘ Rel-4
<p>Use <u>one</u> of the following categories:</p> <p>F (correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	
<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>	

Reason for change:	⌘ The Tdoc R4-010986 was endorsed in the RAN WG4 meeting#18 in Berlin. However, one clarification to the requirement would still be beneficial to avoid misunderstanding.
Summary of change:	⌘ A modification compared to R4-010986 is in the second bullet: "has been reported" is changed to "is to be reported".
Consequences if not approved:	⌘ Without the requirement similar behaviour cannot be ensured between different terminals in case of RACH reporting.

Clauses affected:	⌘ 5.8, 5.8.1 and 5.8.2
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> Test specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> O&M Specifications ⌘ <input type="checkbox"/>
Other comments:	⌘

5.6 Cell Re-selection in CELL_PCH

5.6.1 Introduction

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

5.6.2 Requirements

Requirements for cell re-selection in CELL_PCH are the same as for cell re-selection in idle mode, see section 4.2. UE shall support all DRX cycle lengths in table 4.1, according to [16].

5.7 Cell Re-selection in URA_PCH

5.7.1 Introduction

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

5.7.2 Requirements

Requirements for cell re-selection in CELL_PCH are the same as for cell re-selection in idle mode, see section 4.2. UE shall support all DRX cycle lengths in table 4.1, according to [16].

5.8 RACH reporting

5.8.1 Introduction

The network may request the UE to report on RACH cell CPICH levels for the serving cell and up to 6 strongest monitored set cells and SFN-SFN observed time difference between the serving cell and up to 6 different monitored set cells.

5.8.2 Requirements

If all of the following conditions are true, the UE is allowed to have an additional delay of $N_{RACH} \cdot 50$ ms in RACH transmission compared to the normal RACH transmission delay.

- SFN-SFN observed time difference measurement results are required to be reported on RACH
- The set of cells on which the SFN-SFN observed time difference measurement is to be reported has not changed since the previous RACH measurement report
- The UE has not measured the SFN-SFN observed time differences for the cells to be reported on RACH in the CELL_FACH state according to the requirements defined in Section 8.4.2.2

If at least one of the previous conditions is false, the UE shall be able to report the requested measurement results on RACH within a normal RACH transmission delay.

N_{RACH} is the number of cells requiring SFN decoding prior to the reporting of SFN-SFN observed time difference measurement results on RACH.

CHANGE REQUEST

⌘ **25.133 CR 158** ⌘ ev **-** ⌘ Current version: **3.6.0** ⌘

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Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction for Test Case A.8.1.3		
Source:	⌘ RAN WG4		
Work item code:	⌘	Date:	⌘ 09-08-2001
Category:	⌘ F	Release:	⌘ Rel99
	Use <u>one</u> of the following categories:		Use <u>one</u> 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 <u>IR 21.900</u> .		REL-4 (Release 4)
			REL-5 (Release 5)

Reason for change:	⌘ This correction was approved in the Tdoc R4-010735 but it was not implemented into the version 3.6.0 of TS25.133.
Summary of change:	⌘ The measurement reporting delay in Section A.8.1.3.2 is corrected to 800 ms.
Consequences if not approved:	⌘ The test case does not follow the general performance requirements of TS25.133.

Clauses affected:	⌘ A.8.1.3.2
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘
	<input checked="" type="checkbox"/> Test specifications ⌘ 34.121
	<input type="checkbox"/> O&M Specifications
Other comments:	⌘

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

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

A.8.1.3.1 Test Purpose and Environment

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

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

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

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

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

Parameter	Unit	Cell 1				Cell 2				Cell3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/I _{or}	dB	-10				-10				-10			
PCCPCH_Ec/I _{or}	dB	-12				-12				-12			
SCH_Ec/I _{or}	dB	-12				-12				-12			
PICH_Ec/I _{or}	dB	-15				-15				-15			
DPCH_Ec/I _{or}	dB	-17				N/A				N/A			
OCNS_Ec/I _{or}	dB	-1.049				-0.941				-0.941			
\hat{I}_{or}/I_{oc}	dB	14.5 5	28.5 1	14.4 5	28.5 1	-Inf	27.5 1	13.9 5	21.5 1	8.05	21.5 1	13.9 5	27.5 1
I_{oc}	dBm/ 3.84 MHz	-85											
CPICH_Ec/I _o	dB	-11	-13	-14.5	-13	-Inf	-14.0	-15	-20	-17.5	-20	-15	-14
Propagation Condition		AWGN											

A.8.1.3.2 Test Requirements

- a) The UE shall send one Event 1A triggered measurement report for Cell2, with a measurement reporting delay less than 2800 ms from the beginning of time period T2.

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

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

CR-Form-v4

CHANGE REQUEST⌘ **25.133 CR 159** ⌘ ev **-** ⌘ Current version: **4.1.0** ⌘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 Core Network

Title:	⌘ Correction for Test Case A.8.1.3												
Source:	⌘ RAN WG4												
Work item code:	⌘ Date: ⌘ 2001-09-06												
Category:	⌘ A												
Use <u>one</u> of the following categories:													
<table border="0"> <tr> <td>F (correction)</td> <td>R96 (Release 1996)</td> </tr> <tr> <td>A (corresponds to a correction in an earlier release)</td> <td>R97 (Release 1997)</td> </tr> <tr> <td>B (addition of feature),</td> <td>R98 (Release 1998)</td> </tr> <tr> <td>C (functional modification of feature)</td> <td>R99 (Release 1999)</td> </tr> <tr> <td>D (editorial modification)</td> <td>REL-4 (Release 4)</td> </tr> <tr> <td></td> <td>REL-5 (Release 5)</td> </tr> </table>		F (correction)	R96 (Release 1996)	A (corresponds to a correction in an earlier release)	R97 (Release 1997)	B (addition of feature),	R98 (Release 1998)	C (functional modification of feature)	R99 (Release 1999)	D (editorial modification)	REL-4 (Release 4)		REL-5 (Release 5)
F (correction)	R96 (Release 1996)												
A (corresponds to a correction in an earlier release)	R97 (Release 1997)												
B (addition of feature),	R98 (Release 1998)												
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D (editorial modification)	REL-4 (Release 4)												
	REL-5 (Release 5)												
Detailed explanations of the above categories can be found in 3GPP <u>IR 21.900</u> .													

Reason for change:	⌘ This correction was approved in the Tdoc R4-010735 but it was not implemented into the version 3.6.0 of TS25.133 and version 4.1.0 of TS 25.133.
Summary of change:	⌘ The measurement reporting delay in Section A.8.1.3.2 is corrected to 800 ms.
Consequences if not approved:	⌘ The test case does not follow the general performance requirements of TS25.133.

Clauses affected:	⌘ A.8.1.3.2
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input checked="" type="checkbox"/> Test specifications ⌘ <input type="checkbox"/> O&M Specifications
Other comments:	⌘ 34.121

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

A.8.1.3.1 Test Purpose and Environment

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

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

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

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

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

Parameter	Unit	Cell 1				Cell 2				Cell3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/I _{or}	dB	-10				-10				-10			
PCCPCH_Ec/I _{or}	dB	-12				-12				-12			
SCH_Ec/I _{or}	dB	-12				-12				-12			
PICH_Ec/I _{or}	dB	-15				-15				-15			
DPCH_Ec/I _{or}	dB	-17				N/A				N/A			
OCNS_Ec/I _{or}	dB	-1.049				-0.941				-0.941			
\hat{I}_{or}/I_{oc}	dB	14.5 5	28.5 1	14.4 5	28.5 1	-Inf	27.5 1	13.9 5	21.5 1	8.05	21.5 1	13.9 5	27.5 1
I_{oc}	dBm/ 3.84 MHz	-85											
CPICH_Ec/I _o	dB	-11	-13	-14.5	-13	-Inf	-14.0	-15	-20	-17.5	-20	-15	-14
Propagation Condition		AWGN											

A.8.1.3.2 Test Requirements

- a) The UE shall send one Event 1A triggered measurement report for Cell2, with a measurement reporting delay less than 8200 ms from the beginning of time period T2.

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

CHANGE REQUEST

⌘ **25.133 CR 160** ⌘ ev **-** ⌘ Current version: **3.6.0** ⌘

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Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ UTRAN to GSM cell re-selection test cases		
Source:	⌘ RAN WG4		
Work item code:	⌘	Date:	⌘ 2001-08-30
Category:	⌘ F	Release:	⌘ Rel99
	Use <u>one</u> of the following categories:		Use <u>one</u> 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-4 (Release 4)
			REL-5 (Release 5)

Reason for change:	⌘ The test case for UTRAN to GSM cell re-selection is not updated according to cell re-selection requirements in section 4.2. Parameter settings for the test case environment are missing or have erroneous settings.
Summary of change:	⌘ Parameters for the current test case in 25.133 sectopm A.4.3 have been updated and a second scenario for the case when the signal level from the UMTS cell suddenly drops have been added. Requirement on cell re-selection delay in test case takes cell re-selection reaction time and reading of system information in the GSM cell into account.
Consequences if not approved:	⌘ Test case for UMTS to GSM re-selection is not completely specified.

Clauses affected:	⌘ A.4.3
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> 34.121 ⌘ <input checked="" type="checkbox"/> Test specifications ⌘ <input type="checkbox"/> O&M Specifications
Other comments:	⌘

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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.4.3 UTRAN to GSM Cell Re-Selection

A.4.3.1 Scenario 1

A.4.3.1.1 Test Purpose and Environment

This test is to verify the requirement for the UTRAN to GSM cell re-selection delay reported in section 4.23.2.1.

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 12 GSM cells. Test parameters are given in Table, A.4.5, A.4.6, A.4.7. Cell 1 and cell 2 shall belong to different Location Areas.

Table A.4.5: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
<u>DRX cycle length</u>		<u>s</u>	<u>1.28</u>	
T1		s	<u>45</u>	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	<u>35</u>	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table A.4.6: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/lor	dB	-10	
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
OCNS_Ec/lor	dB	-0.941	
\hat{I}_{or}/I_{oc}	dB	0 -0.3	-5 -7.3
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/lo	dB	-13	-16 -2
CPICH_RSCP	dBm	-80 -4	-85 -2
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH E _c /N ₀	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset _{1s,n}	dB	C1, C2: 0	
Qhyst1	dB	0	
PENALTY_TIME	s	C2: 0	
TEMPORARY_OFFSET1	dB	C2: 0	
Treselection	s	0	
Ssearch _{RAT}	dB	not sent	

Table A.4.7: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-79 0	-756 0
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

A.4.3.1.2 Test Requirements

The requirements reported in section 4.3.2.1 shall be verified in more than [90%] of the cases.

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 RR Channel Request message for location update to Cell 2.

The cell re-selection delay shall be less than 26 s + T_{BCCH}, where T_{BCCH} is the maximum time allowed to read BCCH data from GSM cell [21].

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: 4 * T_{measureGSM} + T_{BCCH}, where:

$T_{\text{measureGSM}}$ See Table 4.1 in section 4.2.2.

T_{BCCH} Maximum time allowed to read BCCH data from GSM cell [21].
According to [21], the maximum time allowed to read the BCCH data, when being
synchronized to a BCCH carrier, is 1.9 s.

This gives a total of 25.6 s + T_{BCCH} , allow 26 s + T_{BCCH} in the test case.

A.4.3.2 Scenario 2

A.4.3.2.1 Test Purpose and Environment

This test is to verify the requirement for the UTRAN to GSM cell re-selection delay reported in section 4.2.

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 12 GSM cells. Test parameters are given in Table, A.4.x1, A.4.x2, A.4.x3. Cell 1 and cell 2 shall belong to different Location Areas.

Table A.4.x1: General test parameters for UTRAN to GSM Cell Re-selection

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Comment</u>
<u>Initial condition</u>	<u>Active cell</u>	<u>Cell1</u>	
	<u>Neighbour cell</u>	<u>Cell2</u>	
<u>Final condition</u>	<u>Active cell</u>	<u>Cell2</u>	
<u>DRX cycle length</u>	<u>s</u>	<u>1.28</u>	
<u>T1</u>	<u>s</u>	<u>45</u>	
<u>T2</u>	<u>s</u>	<u>10</u>	

Table A.4.x2: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH E_c/I_o	dB	-10	
PCCPCH E_c/I_o	dB	-12	
SCH E_c/I_o	dB	-12	
PICH E_c/I_o	dB	-15	
OCNS E_c/I_o	dB	-0.941	
\hat{I}_{or}/I_{oc}	dB	20	-9
I_{oc}	dBm/3.84 MHz	-81	
CPICH E_c/I_o	dB	-10.0	-19.5
CPICH_RSCP	dBm	-70	-100
Propagation Condition		AWGN	
Cell selection and reselection quality measure		CPICH E_c/N_0	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset _{1s,n}	dB	C1, C2: 0	
Qhyst1	dB	0	
PENALTY_TIME	s	C2: 0	
TEMPORARY_OFFSET1	dB	C2: 0	
Treselection	s	0	
Ssearch _{RAT}	dB	not sent	

Table A.4.x3: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-80	-80
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

A.4.3.2.2 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 RR Channel Request message for location update to Cell 2.

The cell re-selection delay shall be less than $4\text{ s} + T_{\text{BCCH}}$, where T_{BCCH} is the maximum time allowed to read BCCH data from GSM cell [21].

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

NOTE:

The cell re-selection delay can be expressed as: $3 * T_{\text{measureFDD}} + T_{\text{BCCH}}$, where:

$T_{\text{measureFDD}}$ See Table 4.1 in section 4.2.2.

T_{BCCH} Maximum time allowed to read BCCH data from GSM cell [21].
According to [21], the maximum time allowed to read the BCCH data, when being
synchronized to a BCCH carrier, is 1.9 s.

This gives a total of $3.84 \text{ s} + T_{\text{BCCH}}$, allow $4 \text{ s} + T_{\text{BCCH}}$ in the test case.

CHANGE REQUEST

⌘ **25.133 CR 161** ⌘ ev **-** ⌘ Current version: **4.1.0** ⌘

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Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ UTRAN to GSM cell re-selection test cases		
Source:	⌘ RAN WG4		
Work item code:	⌘	Date:	⌘ 2001-09-04
Category:	⌘ A	Release:	⌘ Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> 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-4 (Release 4)
			REL-5 (Release 5)

Reason for change:	⌘ The test case for UTRAN to GSM cell re-selection is not updated according to cell re-selection requirements in section 4.2. Parameter settings for the test case environment are missing or have erroneous settings.
Summary of change:	⌘ Parameters for the current test case in 25.133 sectopm A.4.3 have been updated and a second scenario for the case when the signal level from the UMTS cell suddenly drops have been added. Requirement on cell re-selection delay in test case takes cell re-selection reaction time and reading of system information in the GSM cell into account.
Consequences if not approved:	⌘ Test case for UMTS to GSM re-selection is not completely specified.

Clauses affected:	⌘ A.4.3
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> 34.121 ⌘ <input checked="" type="checkbox"/> Test specifications ⌘ <input type="checkbox"/> O&M Specifications
Other comments:	⌘ Corresponding R99 CR in R4-011215

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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.4.3 UTRAN to GSM Cell Re-Selection

A.4.3.1 Scenario 1

A.4.3.1.1 Test Purpose and Environment

This test is to verify the requirement for the UTRAN to GSM cell re-selection delay reported in section 4.23.2.1.

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 12 GSM cells. Test parameters are given in Table, A.4.5, A.4.6, A.4.7. Cell 1 and cell 2 shall belong to different Location Areas.

Table A.4.5: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
<u>DRX cycle length</u>		<u>s</u>	<u>1.28</u>	
T1		s	<u>45</u>	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	<u>35</u>	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table A.4.6: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/lor	dB	-10	
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
OCNS_Ec/lor	dB	-0.941	
\hat{I}_{or}/I_{oc}	dB	0 -0.3	-5 -7.3
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/lo	dB	-13	-16 -2
CPICH_RSCP	dBm	-80 [L1]	-85 [L2]
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH E _c /N ₀	
Qqualmin	dB	-20 [H]	
Qrxlevmin	dBm	-115 [H]	
UE_TXPWR_MAX_RACH	dBm	21 [H]	
Qoffset _{1s,n}	dB	C1, C2: 0 [H]	
Qhyst1	dB	0 [H]	
PENALTY_TIME	s	C2: 0 [H]	
TEMP_OFFSET1	dB	C2: 0 [H]	
Treselection	s	0 [H]	
Ssearch _{RAT}	dB	not sent [H]	

Table A.4.7: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-79 0	-75 60
RXLEV_ACCESS_MIN	dBm	-104 [H]	
MS_TXPWR_MAX_CCH	dBm	33 [H]	

A.4.3.1.2 Test Requirements

The requirements reported in section 4.3.2.1 shall be verified in more than [90%] of the cases.

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 RR Channel Request message for location update to Cell 2.

The cell re-selection delay shall be less than 26 s + T_{BCCH}, where T_{BCCH} is the maximum time allowed to read BCCH data from GSM cell [21].

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: 4 * T_{measureGSM} + T_{BCCH}, where:

$T_{\text{measureGSM}}$ See Table 4.1 in section 4.2.2.

T_{BCCH} Maximum time allowed to read BCCH data from GSM cell [21].
According to [21], the maximum time allowed to read the BCCH data, when being
synchronized to a BCCH carrier, is 1.9 s.

This gives a total of 25.6 s + T_{BCCH} , allow 26 s + T_{BCCH} in the test case.

A.4.3.2 Scenario 2

A.4.3.2.1 Test Purpose and Environment

This test is to verify the requirement for the UTRAN to GSM cell re-selection delay reported in section 4.2.

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 12 GSM cells. Test parameters are given in Table, A.4.x1, A.4.x2, A.4.x3. Cell 1 and cell 2 shall belong to different Location Areas.

Table A.4.x1: General test parameters for UTRAN to GSM Cell Re-selection

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Comment</u>
<u>Initial condition</u>	<u>Active cell</u>	<u>Cell1</u>	
	<u>Neighbour cell</u>	<u>Cell2</u>	
<u>Final condition</u>	<u>Active cell</u>	<u>Cell2</u>	
<u>DRX cycle length</u>	<u>s</u>	<u>1.28</u>	
<u>T1</u>	<u>s</u>	<u>45</u>	
<u>T2</u>	<u>s</u>	<u>10</u>	

Table A.4.x2: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH E_c/I_o	dB	-10	
PCCPCH E_c/I_o	dB	-12	
SCH E_c/I_o	dB	-12	
PICH E_c/I_o	dB	-15	
OCNS E_c/I_o	dB	-0.941	
\hat{I}_{or}/I_{oc}	dB	20	-9
I_{oc}	dBm/3.84 MHz	-81	
CPICH E_c/I_o	dB	-10.0	-19.5
CPICH_RSCP	dBm	-70	-100
Propagation Condition		AWGN	
Cell selection and reselection quality measure		CPICH E_c/N_0	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset _{1s,n}	dB	C1, C2: 0	
Qhyst1	dB	0	
PENALTY_TIME	s	C2: 0	
TEMPORARY_OFFSET1	dB	C2: 0	
Treselection	s	0	
Ssearch _{RAT}	dB	not sent	

Table A.4.x3: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-80	-80
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

A.4.3.2.2 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 RR Channel Request message for location update to Cell 2.

The cell re-selection delay shall be less than $4\text{ s} + T_{\text{BCCH}}$, where T_{BCCH} is the maximum time allowed to read BCCH data from GSM cell [21].

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

NOTE:

The cell re-selection delay can be expressed as: $3 * T_{\text{measureFDD}} + T_{\text{BCCH}}$, where:

$T_{\text{measureFDD}}$ See Table 4.1 in section 4.2.2.

T_{BCCH} Maximum time allowed to read BCCH data from GSM cell [21].
According to [21], the maximum time allowed to read the BCCH data, when being
synchronized to a BCCH carrier, is 1.9 s.

This gives a total of $3.84 \text{ s} + T_{\text{BCCH}}$, allow $4 \text{ s} + T_{\text{BCCH}}$ in the test case.

CHANGE REQUEST

⌘ **TS25.133 CR 162** ⌘ 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 Core Network

Title:	⌘ Requirements for the monitor list		
Source:	⌘ RAN WG4		
Work item code:	⌘	Date:	⌘ 12 August 2001
Category:	⌘ F	Release:	⌘ Rel99
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	R96 (Release 1996)	2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R97 (Release 1997)	R96 (Release 1996)
	B (addition of feature),	R98 (Release 1998)	R97 (Release 1997)
	C (functional modification of feature)	R99 (Release 1999)	R98 (Release 1998)
	D (editorial modification)	REL-4 (Release 4)	R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <u>TR 21.900</u> .	REL-5 (Release 5)	

Reason for change:	⌘ The requirements for the UE shall be capable of monitoring are not consistant in the requirements for cell-reselection, CELL_DCH state and CELL_FACH state. The core requirements are identical but the text description in the current text is confusing and not consistant.
Summary of change:	⌘ A consistant text description is provided for the common part
Consequences if not approved:	⌘ Non-uniform UE behaviour

Clauses affected:	⌘ 4.2.2.8. Number of cells in cell lists (idle mode cell re-selection)		
	8.1.2.1 UE measurement capability (CELL_DCH state)		
	8.4.2.1 UE measurement capability (CELL_FACH state) is provided in a separate CR as part of a CR to CELL_FACH		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘	⌘ TS34.121
	<input checked="" type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
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 <ftp://ftp.3gpp.org/specs/>. 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.

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First change -----

4.2.2.8 Number of cells in cell lists

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

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

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

2nd change -----

8.1.2.1 UE Measurement Capability

In CELL_DCH state ~~The~~ the UE shall be able to monitor up to

- 32 intra frequency FDD cells (including active set), and
- 32 inter frequency cells, including
 - FDD ~~mode~~-cells distributed on up to 2 additional FDD carriers and
 - Depending on UE Capability, TDD ~~mode~~-cells, distributed on up to 3 TDD carriers and-
 - Depending on UE capability, the UE shall also in addition be able to support and process at least 32 GSM cells distributed on up to 32 GSM carriers.

If the UE utilises compressed mode for inter-frequency and/or inter-RAT measurements, in order for the requirements in the following subsections to apply the UTRAN must provide

- transmission gap pattern sequences with TGPL1 > 1 and ensure that the activation of several transmission gap pattern sequences in parallel does not result in every frame being compressed, and
- the patterns within a transmission gap pattern sequence are identical (i.e., TGPL1 = TGPL2).

Performance requirements for different types of transmission gap pattern sequences and different number of cells is defined in the following sections.

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

The received CPICH E_c/I_o is defined as

$$\left(\frac{CPICH - E_c}{I_o} \right)_{in \ dB} = \left(\frac{CPICH - E_c}{I_{or}} \right)_{in \ dB} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{in \ dB}$$

and the received SCH E_c/I_o is defined as

$$\left(\frac{SCH - E_c}{I_o} \right)_{in \ dB} = \left(\frac{SCH - E_c}{I_{or}} \right)_{in \ dB} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{in \ dB}$$

3rd change -----

-

8.4.2.1 UE Measurement Capability

In CELL_FACH state, ~~t~~The UE shall be able to monitor up to

- ~~__~~32 intra frequency FDD cells, and
- ~~__~~32 inter frequency cells, including
 - FDD ~~mode~~-cells distributed on up to 2 additional FDD carriers and
 - Depending on UE Capability, TDD ~~mode~~-cells, distributed on up to 3 TDD carriers, and.
- ~~__~~ Depending on UE capability, ~~the UE shall also in addition be able to monitor at least~~32 GSM cells distributed on up to 32 GSM carriers.

The requirements in section 9 on CPICH Ec/Io and 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 are used to find and measure on other cells.

M_REP is the Measurement Occasion cycle length The FACH Measurement Occasion of N_{TTI} frames will be repeated every $N_{TTI} \cdot M_REP$ frame. 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.

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 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.

For this three parameters are defined:

N_{FDD} is 0 or 1. If there are inter-frequency FDD cells in the neighbour list $N_{FDD}=1$, otherwise $N_{FDD}=0$.

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

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

The measurement time T_{meas} is then defined as

$$T_{meas} = \left[(N_{FDD} + N_{TDD} + N_{GSM}) \cdot N_{TTI} \cdot M_REP \cdot 10 \right] \text{ms}$$

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.

CHANGE REQUEST

⌘ **TS25.133 CR 163** ⌘ ev **-** ⌘ Current version: **4.1.0** ⌘

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 Core Network

Title:	⌘ Requirements for the monitor list		
Source:	⌘ RAN WG4		
Work item code:	⌘	Date:	⌘ 12 August 2001
Category:	⌘ F	Release:	⌘ Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	R96 (Release 1996)	2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R97 (Release 1997)	R96 (Release 1996)
	B (addition of feature),	R98 (Release 1998)	R97 (Release 1997)
	C (functional modification of feature)	R99 (Release 1999)	R98 (Release 1998)
	D (editorial modification)	REL-4 (Release 4)	R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <u>IR 21.900</u> .		REL-5 (Release 5)

Reason for change:	⌘ The requirements for the UE shall be capable of monitoring are not consistent in the requirements for cell-reselection, CELL_DCH state and CELL_FACH state. The core requirements are identical but the text description in the current text is confusing and not consistent.
Summary of change:	⌘ A consistent text description is provided for the common part
Consequences if not approved:	⌘ Non-uniform UE behaviour

Clauses affected:	⌘ 4.2.2.8. Number of cells in cell lists (idle mode cell re-selection)		
	8.1.2.1 UE measurement capability (CELL_DCH state)		
	8.4.2.1 UE measurement capability (CELL_FACH state) is provided in a separate CR as part of a CR to CELL_FACH		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘	TS34.121
	<input checked="" type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
Other comments:	⌘		

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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.

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First change -----

4.2.2.8 Number of cells in cell lists

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

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

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

2nd change -----

8.1.2.1 UE Measurement Capability

In CELL_DCH state ~~The~~ the UE shall be able to monitor up to

- 32 intra frequency FDD cells (including active set), and
- 32 inter frequency cells, including
 - FDD ~~mode~~-cells distributed on up to 2 additional FDD carriers and
 - Depending on UE Capability, TDD ~~mode~~-cells, distributed on up to 3 TDD carriers and-
 - Depending on UE capability, the UE shall also in addition be able to support and process at least 32 GSM cells distributed on up to 32 GSM carriers.

If the UE utilises compressed mode for inter-frequency and/or inter-RAT measurements, in order for the requirements in the following subsections to apply the UTRAN must provide

- transmission gap pattern sequences with TGPL1 > 1 and ensure that the activation of several transmission gap pattern sequences in parallel does not result in every frame being compressed, and
- the patterns within a transmission gap pattern sequence are identical (i.e., TGPL1 = TGPL2).

Performance requirements for different types of transmission gap pattern sequences and different number of cells is defined in the following sections.

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

The received CPICH E_c/I_o is defined as

$$\left(\frac{CPICH - E_c}{I_o} \right)_{in \text{ dB}} = \left(\frac{CPICH - E_c}{I_{or}} \right)_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{in \text{ dB}}$$

and the received SCH E_c/I_o is defined as

$$\left(\frac{SCH - E_c}{I_o} \right)_{in \text{ dB}} = \left(\frac{SCH - E_c}{I_{or}} \right)_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{in \text{ dB}}$$

3rd change -----

-

8.4.2.1 UE Measurement Capability

In CELL_FACH state, ~~t~~The UE shall be able to monitor up to

- ~~__~~32 intra frequency FDD cells, and
- ~~__~~32 inter frequency cells, including
 - FDD ~~mode~~-cells distributed on up to 2 additional FDD carriers and
 - Depending on UE Capability, TDD ~~mode~~-cells, distributed on up to 3 TDD carriers, and.
- ~~__~~ Depending on UE capability, ~~the UE shall also in addition be able to monitor at least~~32 GSM cells distributed on up to 32 GSM carriers.

The requirements in section 9 on CPICH Ec/Io and 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 are used to find and measure on other cells.

M_REP is the Measurement Occasion cycle length The FACH Measurement Occasion of N_{TTI} frames will be repeated every $N_{TTI} \cdot M_REP$ frame. 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.

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 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.

For this three parameters are defined:

N_{FDD} is 0 or 1. If there are inter-frequency FDD cells in the neighbour list $N_{FDD}=1$, otherwise $N_{FDD}=0$.

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

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

The measurement time T_{meas} is then defined as

$$T_{meas} = \left[(N_{FDD} + N_{TDD} + N_{GSM}) \cdot N_{TTI} \cdot M_REP \cdot 10 \right] \text{ms}$$

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.

CHANGE REQUEST

⌘ 25.133 CR 164 ⌘ 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 Core Network

Title:	⌘ Correction for Event Triggering Report		
Source:	⌘ RAN WG4		
Work item code:	⌘	Date:	⌘ 2001-09-05
Category:	⌘ F	Release:	⌘ Rel99
Use <u>one</u> of the following categories:		Use <u>one</u> 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 IR 21.900 .		REL-4 (Release 4)	
		REL-5 (Release 5)	

Reason for change:	⌘ The case when a cell belonging to the monitored set of cells leaves the reporting range is not explicitly described.
Summary of change:	⌘ Addition of a clause for intra-frequency, inter-frequency, TDD measurements.
Consequences if not approved:	⌘ Inconsistency between the test case A.8.1.1.2 and the requirement of section 8.1.2.5.5 for the reporting delay from beginning of time period T3. See Tdoc R4-011137

Clauses affected:	⌘ 8.1.2.2.5;8.1.2.3.4;8.1.2.4.4		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘	
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
Other comments:	⌘		

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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 [ftp://ftp.3gpp.org/specs/](http://ftp.3gpp.org/specs/). 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.

8.1.2.2.5 Event Triggered Reporting

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

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

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

Editors Note: The test cases in section A.8 will need revisions to reflect the general requirements.

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined $T_{\text{identify_intra}}$ defined in Section 8.1.2.2.1

If a cell, belonging to monitored set, which the UE has detected and measured at least once over the measurement period, becomes undetectable for a period < 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than $T_{\text{Measurement_Period_Intra}}$ ms provided the timing to that cell has not changed more than ± 32 chips and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{\text{identify_intra}}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{\text{Measurement_Period_Intra}}$ when the L3 filter has not been used.

8.1.2.3.4 Event Triggered Reporting

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

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

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

The delay uncertainty is twice the TTI of the uplink DCCH.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify_inter}}$ defined in Section 8.1.2.3.1 When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{\text{identify_inter}}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{\text{Measurement_Period_Inter}}$ provided the timing to that cell has not changed more than ± 32 chips while transmission gap has not been available and the L3 filter has not been used.

8.1.2.4.4 Event Triggered Reporting

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

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

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

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify_inter}}$ defined in Section 8.1.2.4.1 When L3 filtering is used an additional delay can be expected.

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

CR-Form-v4			
CHANGE REQUEST			
⌘	25.133 CR 165	⌘ ev - ⌘	Current version: 4.1.0 ⌘

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 Core Network

Title:	⌘ Correction for Event Triggering Report		
Source:	⌘ RAN WG4		
Work item code:	⌘ 		
	Date: ⌘ 2001-09-05		
Category:	⌘ F		
	<table style="width: 100%; font-size: small;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> </td> <td style="width: 50%; vertical-align: top;"> <p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>REL-4 (Release 4)</p> <p>REL-5 (Release 5)</p> </td> </tr> </table>	<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>REL-4 (Release 4)</p> <p>REL-5 (Release 5)</p>
<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>REL-4 (Release 4)</p> <p>REL-5 (Release 5)</p>		
	Release: ⌘ Rel-4		

Reason for change:	⌘ Corresponding REL-4 CAT F CR to R4-011300. The case when a cell belonging to the monitored set of cells leaves the reporting range is not explicitly described.
Summary of change:	⌘ Addition of a clause for intra-frequency, inter-frequency, TDD measurements.
Consequences if not approved:	⌘ Inconsistency between the test case A.8.1.1.2 and the requirement of section 8.1.2.5.5 for the reporting delay from beginning of time period T3. See Tdoc R4-011137

Clauses affected:	⌘ 8.1.2.2.5;8.1.2.3.4;8.1.2.4.4		
Other specs affected:	<input type="checkbox"/>	Other core specifications	⌘
	<input type="checkbox"/>	Test specifications	
	<input type="checkbox"/>	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: http://www.3gpp.org/3G_Specs/CRs.htm. 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 <ftp://ftp.3gpp.org/specs/> 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.

8.1.2.2.5 Event Triggered Reporting

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

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

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

Editors Note: The test cases in section A.8 will need revisions to reflect the general requirements.

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined $T_{\text{identify_intra}}$ defined in Section 8.1.2.2.1

If a cell, belonging to monitored set, which the UE has detected and measured at least once over the measurement period, becomes undetectable for a period < 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than $T_{\text{Measurement_Period_Intra}}$ ms provided the timing to that cell has not changed more than ± 32 chips and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{\text{identify_intra}}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{\text{Measurement_Period_Intra}}$ when the L3 filter has not been used.

8.1.2.3.4 Event Triggered Reporting

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

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

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

The delay uncertainty is twice the TTI of the uplink DCCH.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify_inter}}$ defined in Section 8.1.2.3.1 When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{\text{identify_inter}}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{\text{Measurement_Period_Inter}}$ provided the timing to that cell has not changed more than ± 32 chips while transmission gap has not been available and the L3 filter has not been used.

8.1.2.4.4 Event Triggered Reporting

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

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

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

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify_inter}}$ defined in Section 8.1.2.4.1 When L3 filtering is used an additional delay can be expected.

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