TSG-RAN Meeting #9
Hawaii, US, 20 - 22 September 2000

TSGRP#9(00)0399

Title: **Agreed CRs to TS 25.123**

Source: **TSG-RAN WG4**

Agenda item: **5.4.3**

Tdoc Num	TS	CR number	Title	TYPE	Status	Cur_Ver	New_Ver
R4-000601	25.123	18	Repetition Period of System Information	F	agreed	3.2.0	3.3.0
R4-000602	25.123	19	RRC connection mobility in cell_FACH, cell_PCH and URA_PCH	F	agreed	3.2.0	3.3.0
R4-000639	25.123	20	Basestation SIR Measurement	F	agreed	3.2.0	3.3.0
R4-000640	25.123	21	UE SIR Measurement Accuracy	F	agreed	3.2.0	3.3.0
R4-000682	25.123	17	Basestation Physical Channel BER Measurement	F	agreed	3.2.0	3.3.0
R4-000686	25.123	22	UE TS ISCP range/mapping correction	F	agreed	3.2.0	3.3.0
R4-000688	25.123	23	Alignment of TDD measurements for UE: SFN-CFN observed time difference	F	agreed	3.2.0	3.3.0
R4-000689	25.123	24	UTRAN Transport Channel BLER	F	agreed	3.2.0	3.3.0
R4-000723	25.123	25	Accuracy requirements for Node-B synchronisation	F	agreed	3.2.0	3.3.0
R4-000747	25.123	26	Alignment of TDD measurements with FDD: GPS related measurements	F	agreed	3.2.0	3.3.0
R4-000779	25.123	16	Handling of measurement uncertainties in conformance testing (TDD) for RRM measurements	F	agreed	3.2.0	3.3.0

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Document R4-000779
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25.123	CR	16	Current Version:	3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN #9	for approval	X	strategic		(for SMG use only)
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Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [ ] Core Network [ ]

Source: RAN WG4 **Date:** 2000-09-05

Subject: Handling of measurement uncertainties in conformance testing (TDD) for RRM measurements

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Alignment with draft ITU/R recommendation on handling of measurement uncertainties for a global circulation of terminals

Clauses affected: 3.4 (new subclause)

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications	X	→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

3.4 Test tolerances

The requirements given in this specification make no allowance for measurement uncertainty. The test specifications 34.122 and 25.142 define test tolerances. These test tolerances are individually calculated for each test. The test tolerances are then added to the limits in this specification to create test limits. The measurement results are compared against the test limits as defined by the shared risk principle.

Shared Risk is defined in ETR 273 Part 1 sub-part 2 section 6.5.

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25.123	CR	17	Current Version:	3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN#9	for approval	X	strategic		(for SMG use only)
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Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG RAN 4 **Date:** 04/09/00

Subject: Basestation Physical Channel BER Measurement

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Physical Channel BER has been removed as a reported measurement.

Clauses affected: 9.2.1.5

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

9.2.1.5 Physical channel BER

The measurement period shall be equal to the [TTI] of the transport channel.

9.2.1.5.1 Accuracy requirement

Table 9-22 Physical channel BER Intra frequency accuracy

Parameter	Unit	Accuracy
BER		+/- 10% of the absolute BER value

9.2.1.5.2 Range/mapping

Physical channel BER is given with a logarithmic resolution of 0.008125 within the range [10^-2.06375 ... 1] with two separate cases Physical channel BER=0 and Physical channel BER between 0 and 10^-2.06375..
Physical channel BER shall be reported in the unit BER_LOG, where:
BER_LOG_000: Physical channel BER = 0
BER_LOG_001: $-\infty$ < Log10(Physical channel BER) < -2.06375
BER_LOG_002: -2.06375≤ Log10(Physical channel BER) < -2.055625
BER_LOG_003: -2.055625 ≤ Log10(Physical channel BER) < -2.0475
...
BER_LOG_253: -0.024375 ≤ Log10(Physical channel BER) < -0.01625
BER_LOG_254: -0.01625≤ Log10(Physical channel BER) < -0.008125
BER_LOG_255: -0.008125 ≤ Log10(Physical channel BER) ≤ 0.000

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25.123	CR	18	Current Version:	3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN 9	for approval	X	strategic		(for SMG use only)
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Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [ ] Core Network [ ]

Source: RAN WG4 **Date:** 08/09/2000

Subject: Repetition Period of System Information

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change: The cell selection and re-selection depends on the repetition period of system information. A requirement without this information is ambiguous.

Clauses affected: 4.1

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

4 Idle Mode Tasks

4.1 Introduction

Note: ~~The paging period and the repetition rate of relevant system information blocks needs to be defined.~~ Cell selection and cell reselection delays are applicable when the repetition period of all relevant system information blocks is not more than 1280 ms and the length of DRX cycle is not longer than 640 ms.

Whenever a PLMN has been selected the UE shall start to find a suitable cell to camp on, this is 'cell selection'.

When camped on cell the UE regularly searches for a better cell depending on the cell reselection criteria, this is called 'cell reselection'. The procedures for cell selection and reselection are described in 3GPP RAN TS 25.304 'UE procedures in idle mode' and the measurements carried out by the UE are explained in specification 3GPP RAN TS 25.225 'Physical Layer Measurements (TDD)'. The measurements performance requirements are specified in section 11.

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***Document* R4-000602**
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CHANGE REQUEST

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25.123	CR	19	Current Version:	3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN 9	for approval	X	strategic		(for SMG use only)
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Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*

(U)SIM		ME	X	UTRAN / Radio		Core Network	

Source: RAN WG4 **Date:** 08/09/2000

Subject: RRC connection mobility in cell_FACH, cell_PCH and URA_PCH

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Performance requirements for the connected mode states cell_FACH, cell_PCH and URA_PCH are not defined.

Clauses affected: 5

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

The MS (GSM terminology) shall be able to monitor up to [32] carriers.

The MS shall be able synchronize to [6] carriers

The MS shall be able to report back to the network on the [6] strongest cells with correctly identified BSIC.

The MS shall be able to perform this task at levels down to the reference sensitivity level or reference interference levels as specified in GSM 05.05.

The MS shall demodulate the SCH on the BCCH carrier of each surrounding cell and decode the BSIC as often as possible, and as a minimum at least once every [10 seconds].

5.2 Cell Re-selection in Cell_FACH

Cell selection and cell reselection delays are applicable when the repetition period of all relevant system information blocks is not more than 1280 ms.

5.2.1 Cell re-selection single carrier multi cell case

5.2.1.1 Cell re-selection delay

When the UE is camped in Cell_FACH state on one of the cells, the UE shall be capable of re-selecting a new cell according the cell re-selection criteria. The cell re-selection delay is then defined as a time from when radio conditions are changed according to the test scenario to the moment in time when the UE starts sending the RRC Cell Update message to the UTRAN.

5.2.1.1.1 Test parameters

The same test parameters as specified in section 4.3.1.1.1 for cell re-selection in idle mode shall be used.

5.2.1.1.2 Minimum requirements

Cell re-selection shall be correct in more than [X %] of the cases. Cell re-selection is correct if within [x] seconds the UE re-selects a new cell, which fulfils the cell re-selection criteria.

5.3 Cell Re-selection in Cell_PCH

Cell selection and cell reselection delays are applicable when the repetition period of all relevant system information blocks is not more than 1280 ms and the length of DRX cycle is not longer than [640] ms.

5.3.1 Requirements for Cell re-selection single carrier multi cell case

5.3.1.1 Cell re-selection delay

When the UE is camped in Cell_PCH state on one of the cells, the UE shall be capable of re-selecting a new cell according the cell re-selection criteria. The cell re-selection delay is then defined as a time from when radio conditions are changed according to the test scenario to the moment in time when the UE starts sending the RRC Cell Update message to the UTRAN.

5.3.1.1.1 Test Parameters

The same test parameters as specified in section 4.3.1.1.1 for cell re-selection in idle mode shall be used.

5.3.1.1.2 Performance Requirements

Cell re-selection shall be correct in more than [X %] of the cases. Cell re-selection is correct if within [5] seconds the UE re-selects a new cell, which fulfils the cell re-selection criteria.

5.4 Cell Re-selection in URA_PCH

Cell selection and cell reselection delays are applicable when the repetition period of all relevant system information blocks is not more than 1280 ms and the length of DRX cycle is not longer than [640] ms.

5.4.1 Requirements for Cell re-selection single carrier multi cell case

5.4.1.1 Cell re-selection delay

When the UE is camped URA_PCH state on one of the cells, the UE shall be capable of re-selecting a new cell according the cell re-selection criteria. The cell re-selection delay is then defined as a time from when radio conditions are changed according to the test scenario to the moment in time when the UE starts sending the RRC Cell Update message to the UTRAN.

5.4.1.1.1 Test Parameters

The same test parameters as specified in section 4.3.1.1.1 for cell re-selection in idle mode shall be used.

5.4.1.1.2 Minimum Requirements

Cell re-selection shall be correct in more than [X %] of the cases. Cell re-selection is correct if within [x] seconds the UE re-selects a new cell, which fulfils the cell re-selection criteria.

5.52 Radio Link Management

5.52.1 Link adaptation

5.52.1.1 Definition of the function

Radio link adaptation is the ability of UE to select the suitable transport format combination from the assigned transport format combination set, in order to maintain Inner Loop power control, in the case of reaching its maximum transmit power.

5.52.1.2 Link adaptation minimum delay requirement

When maximum transmit power has been reached and Inner Loop PC can no longer be maintained, UE shall start to use the transport format combination corresponding to the next lower bit rate within the assigned transport format set, within the maximum delay of [FFS]ms.

5.52.1.3 Link adaptation accuracy minimum requirement

UE shall not adapt to a lower transport format if the Inner Loop PC command requires its average output power over [FFS] ms to stay within [+FFS] dB of UE's maximum output power.

5.63 Cell Update

5.74 URA Update

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25.123	CR	20	Current Version:	3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN#9	for approval	X	strategic		(for SMG use only)
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Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG RAN 4 **Date:** 04/09/00

Subject: Basestation SIR Measurement

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Accuracy range for SIR has been extended.

Clauses affected: 9.2.1.4

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

9.2.1.3 RSSI

9.2.1.3.1 Absolute accuracy requirements

Table 9-20 RSSI Intra frequency absolute accuracy

Parameter	Unit	Accuracy
RSSI	dB	+/-4dB

9.2.1.3.2 Range/mapping

RSSI is given with a resolution of 0.1dB with the range [-112, ..., -50] dBm.			
RSSI shall be reported in the unit RSSI_LEV, where:			
RSSI_LEV_000:			RSSI < -112.0dBm
RSSI_LEV_001:	-112.0dBm	≤	RSSI < –111.9dBm
RSSI_LEV_002:	-111.9dBm	≤	RSSI < –111.8dBm
...			
RSSI_LEV_619:	-50.2dBm	≤	RSSI < –50.1dBm
RSSI_LEV_620:	-50.1dBm	≤	RSSI < –50.0dBm
RSSI_LEV_621:	-50.0dBm	≤	RSSI

9.2.1.4 SIR

9.2.1.4.1 Absolute accuracy requirements

Table 9-21 SIR Intra frequency absolute accuracy

Parameter	Unit	Accuracy
SIR	dB	+/-3dB for 0<SIR<~~10~~20 dB
SIR	dB	+/-(3 - SIR) dB for –7 ≤ SIR ≤ 0 dB

9.2.1.4.2 Range/mapping

SIR is given with a resolution of 0.5 dB with the range [-11, ..., 20] dB.			
SIR shall be reported in the unit UTRAN_SIR where:			
UTRAN_SIR_00:			SIR < -11.0dB
UTRAN_SIR_01:	-11.0dB	≤	SIR < -10.5dB
UTRAN_SIR_02:	-10.5dB	≤	SIR < -10.0dB
....			
UTRAN_SIR_61:	19.0dB	≤	SIR < 19.5dB
UTRAN_SIR_62:	19.5dB	≤	SIR < 20.0dB
UTRAN_SIR_63:	20.0dB	≤	SIR

9.2.1.5 Physical channel BER

The measurement period shall be equal to the [TTI] of the transport channel.

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25.123	CR	21	Current Version:	3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN#9	for approval	X	strategic		(for SMG use only)
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Proposed change affects: (U)SIM [ ] ME [X] UTRAN / Radio [ ] Core Network [ ]
(at least one should be marked with an X)

Source: TSG RAN 4 **Date:** 04/09/00

Subject: UE SIR Measurement Accuracy

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Accuracy requirement for SIR has been corrected.

Clauses affected: 9.1.1.5

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

9.1.1.5 SIR

9.1.1.5.1 Absolute accuracy requirements

Table 9-12 SIR Intra frequency absolute accuracy

Parameter	Unit	Accuracy	
		Normal conditions	Extreme conditions
SIR	dB	[±3 dB for -70<SIR<20dB]	[ ]
SIR	dB	±(3 - SIR) for -7 ≤ SIR ≤ 0 dB	[ ]

9.1.1.5.2 Range/mapping

SIR is given with a resolution of 0.5 dB with the range [-11, ..., 20] dB.
SIR shall be reported in the unit UE_SIR where:

UE_SIR_00:			SIR < -11.0dB
UE_SIR_01:	-11.0dB ≤	SIR < -10.5dB	
UE_SIR_02:	-10.5dB ≤	SIR < -10.0dB	
....			
UE_SIR_61:	19.0dB ≤	SIR < 19.5dB	
UE_SIR_62:	19.5dB ≤	SIR < 20.0dB	
UE_SIR_63:	20.0dB ≤	SIR	

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CHANGE REQUEST

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25.123	CR	22	Current Version:	V3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN#9	for approval	X	strategic		(for SMG use only)
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Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [ ] Core Network [ ]

Source: RAN WG4 **Date:** 04.09.2000

Subject: UE TS ISCP range/mapping correction

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: The range/mapping for UTRAN TS ISCP has been inserted by mistake in CR25.123-013

Clauses affected:

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

9.1.1.1.2.2.1 Inter frequency measurement relative accuracy requirement

The relative accuracy of CPICH RSCP in inter frequency case is defined as measured code powers after de-spreading from active cell and one or more cells received from two or more RF–carriers. The reported values are relative to active cell value. In this test parameters in table 10-2 is used. In this test cells 1and 2 are present.

Table 9-6 CPICH_RSCP Inter frequency relative accuracy

Parameter	Unit	Accuracy	
		Normal condition	Extreme condition
CPICH_RSCP	dB	± 6	± 6

9.1.1.1.2.2.2 Range/mapping

CPICH RSCP is given with a resolution of 1 dB with the range [-115, ..., -25] dBm.			
CPICH RSCP shall be reported in the unit CPICH_RSCP_LEV where:			
CPICH_RSCP_LEV_00:			CPICH_RSCP < -115dBm
CPICH_RSCP_LEV_01:	-115dBm	≤	CPICH_RSCP < -114dBm
CPICH_RSCP_LEV_02:	-114dBm	≤	CPICH_RSCP < -113dBm
...			
CPICH_RSCP_LEV_89:	-27dBm	≤	CPICH_RSCP < -26dBm
CPICH_RSCP_LEV_90:	-26dBm	≤	CPICH_RSCP < -25dBm
CPICH_RSCP_LEV_91:	-25dBm	≤	CPICH_RSCP

9.1.1.1.2.3 CPICH Ec/Io

9.1.1.1.2.3.1 Inter frequency measurement relative accuracy requirement

The relative accuracy of CPICH Ec/Io in the inter frequency case is defined as measured energy per chip divided by power density in the band. The reported valus are relative to active cell value. In this test the parameters in table 9-7 is used. In this test cells 1and 2 are present.

Table 9-7 CPICH Ec/Io Inter frequency relative accuracy

Parameter	Unit	Accuracy	
		Normal condition	Extreme condition
CPICH_Ec/Io	dB	± 6	± 6

9.1.1.1.2.3.2 Range/mapping

CPICH Ec/No is given with a resolution of 1 dB with the range [-24, ..., 0] dB.			
CPICH Ec/No shall be reported in the unit CPICH_Ec/No where:			
CPICH_Ec/No_00:			CPICH_Ec/No < -24dB
CPICH_Ec/No_01:	-24dB	≤	CPICH_Ec/No < -23dB
CPICH_Ec/No_02:	-23dB	≤	CPICH_Ec/No < -22dB
...			
CPICH_Ec/No_23:	-2dB	≤	CPICH_Ec/No < -1dB
CPICH_Ec/No_24:	-1dB	≤	CPICH_Ec/No < 0dB
CPICH_Ec/No_25:	0dB	≤	CPICH_ Ec/No

9.1.1.2 Timeslot ISCP

9.1.1.2.1 Absolute accuracy requirements

Table 9-8: Timeslot_ISCP Intra frequency absolute accuracy

Parameter	Value	Range	Accuracy

			Normal conditions	Extreme conditions
Timeslot_ISCP	dB	1	± 6	± 9
	dB	2	± 8	± 11

9.1.1.2.2 Range/mapping

Timeslot ISCP is given with a resolution of 1 dB with the range [-115, ..., -25] dBm.
Timeslot ISCP shall be reported in the unit UE_TS_ISCP_LEV where:

UE_TS_ISCP_LEV_00: Timeslot_ISCP < -115dBm
UE_TS_ISCP_LEV_01: -115dBm ≤ Timeslot_ISCP < -114dBm
UE_TS_ISCP_LEV_02: -114dBm ≤ Timeslot_ISCP < -113dBm
...
UE_TS_ISCP_LEV_89: -27dBm ≤ Timeslot_ISCP < -26dBm
UE_TS_ISCP_LEV_90: -26dBm ≤ Timeslot_ISCP < -25dBm
UE_TS_ISCP_LEV_91: -25dBm ≤ Timeslot_ISCP

~~Timeslot ISCP is given with a resolution of 0.5 dB with the range [-120, ..., -80] dBm.~~
~~Timeslot ISCP shall be reported in the unit UTRAN_TS_ISCP_LEV where:~~

~~UTRAN_TS_ISCP_LEV_00: Timeslot_ISCP < -120.0dBm~~
~~UTRAN_TS_ISCP_LEV_01: -120.0dBm ≤ Timeslot_ISCP < -119.5dBm~~
~~UTRAN_TS_ISCP_LEV_02: -119.5dBm ≤ Timeslot_ISCP < -119.0dBm~~
~~...~~
~~UTRAN_TS_ISCP_LEV_79: -81.0dBm ≤ Timeslot_ISCP < -80.5dBm~~
~~UTRAN_TS_ISCP_LEV_80: -80.5dBm ≤ Timeslot_ISCP < -80.0dBm~~
~~UTRAN_TS_ISCP_LEV_81: -80.0dBm ≤ Timeslot_ISCP~~

9.1.1.3 UTRA carrier RSSI

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

9.1.1.3.1 Test parameters for requirement

The table 9-9 and notes 1,2 define the limits of signal strengths, where the requirement is applicable.

Table 9-9 UTRA carrier RSSI Inter frequency test parameters

Parameter	Unit	Cell 1	Cell 2
UTRA RF Channei number	-	Channel 1	Channel 2
Îor/Ioc	dB	-1	-1
Ioc	dBm/ 3.84 MHz	Note 2	Note 2
Range 1: Io	dBm/ 3.84 MHz	-94…-70	-94…-70
Range 2: Io		-94…-50	-94…-50
Propagation condition	-	AWGN	

NOTE 1: For relative accuracy requirement | *Channel 1_Io –Channel 2_Io* | < *20 dB*.

NOTE 2: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.

9.1.1.3.2 Absolute accuracy requirement

Absolute accuracy case only one carrier is applied (Cell 1).

Table 9-10: UTRA carrier RSSI Inter frequency absolute accuracy

Parameter	Value	Range	Accuracy	
			Normal conditions	Extreme conditions
UTRA Carrier RSSI	dB	1	± 4	± 7
	dB	2	± 6	± 9

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25.123	CR	23	Current Version:	V3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN#9	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [ ] Core Network [ ]

Source: RAN WG4 **Date:** 04.09.2000

Subject: Alignment of TDD measurements for UE: SFN-CFN observed time difference

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change:
Alignment of RRM measurement 'SFN-CFN observed time difference' with RAN decisions. According to the definition in TS 25.225 TDD as well as FDD target neighbour cells are covered by the measurement. So the measurement report mapping, defined here, is proposed to cover both cases, where for a TDD neighbour cell the value is reported in frames and for a FDD neighbour cell the value is reported in chips.
For a TDD neighbour cell the range is 0..255 according to TS 25.225. The resolution is given in integer frames and therefor the accuracy needed is +/- 0.5 frames period.
For a FDD neighbour cell the same accuracy requirement as included in TS 25.133 is used: +/-1 chips period. The range is 0..38399 according to TS 25.225.

Clauses affected:

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:
See CR215-013 (R1-00-0911) approved by WG1#14 for inclusion in TS 25.225, WG2-CR 058r1 to TS 25.302 (R2-00-1151) approved on RAN #8 (RP-00-0215).

9.1.1.10 SFN-CFN observed time difference

Note: This measurement is for handover timing purposes to identify active cell and neighbour cell time difference.

9.1.1.10.1 Accuracy requirements

Table x-xx SFN-CFN observed time difference accuracy for a TDD neighbour cell

Parameter	Unit	Accuracy
SFN-CFN observed time difference	frames period	+/-0.5

Table x-xx SFN-CFN observed time difference accuracy for a FDD neighbour cell

Parameter	Unit	Accuracy
SFN-CFN observed time difference	chips period	+/-1

9.1.1.10.2 Range/mapping

Table x-xx SFN-CFN observed time difference range/mapping for a TDD neighbour cell

Reported value	Measured quantity value	Unit
SFN-CFN_TIME_000	0 ≤ Time difference ≤ 1	frame
SFN-CFN_TIME_001	1 ≤ Time difference < 2	frame
SFN-CFN_TIME_002	2 ≤ Time difference < 3	frame
…	…	…
SFN-CFN_TIME_253	253 ≤ Time difference < 254	frame
SFN-CFN_TIME_254	254 ≤ Time difference < 255	frame
SFN-CFN_TIME_255	255 ≤ Time difference ≤ 256	frame

Note 1: The reporting range is for *SFN-CFN observed time difference* is from 0 ... 256 frame.

Table x-xx SFN-CFN observed time difference range/mapping for a FDD neighbour cell

Reported value	Measured quantity value	Unit
SFN-CFN_TIME_00000	0 ≤ Time difference ≤ 1	chip
SFN-CFN_TIME_00001	1 ≤ Time difference < 2	chip
SFN-CFN_TIME_00002	2 ≤ Time difference < 3	chip

…	…	…
SFN-CFN_TIME _38397	38397 ≤ Time difference < 38398	chip
SFN-CFN_TIME _38398	38398 ≤ Time difference < 38399	chip
SFN-CFN_TIME _38399	38399 ≤ Time difference ≤ 38400	chip

Note 1: The reporting range is for *SFN-CFN observed time difference* is from 0 ... 38400 chip.

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25.123	CR	24	Current Version:	V3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN#9	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: RAN WG4 **Date:** 04.09.2000

Subject: UTRAN Transport Channel BLER

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: The Measurement 'UTRAN Transport Channel BLER' has to be removed from TS 25.123, because there is no such measurement defined for UTRAN in TS 25.225

Clauses affected: 9.2.1.6

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments: See TS 25.225v330 for reference of defined Measurements for Support of RRM

UE transmitted power=PUEMAX-3	dB	+2.5/-4.5	±3.5
PUEMAX-10≤UE transmitted power<PUEMAX-3	dB	+3/-5	±4

Note 1: User equipment maximum output power, PUEMAX, is the maximum output power level without tolerance defined for the power class of the UE in 3G TS 25.102 'UTRA (UE) TDD; Radio Transmission and Reception' section 6.2.1 table 6.1.

Note 2: UE transmitted power is the reported value.

9.1.2.1.2 Range/mapping

UE transmitted power is given with a resolution of 1dB with the range [-50, ..., 33] dBm.
UE transmitted power shall be reported in the unit UE_TX_POWER, where:

UE_TX_POWER_000 to UE_TX_POWER_020: reserved
UE_TX_POWER_021: -50dBm ≤ UE_transmitted_power < -49dBm
UE_TX_POWER_022: -49dBm ≤ UE_transmitted_power < -48dBm
UE_TX_POWER_023: -48dBm ≤ UE_transmitted_power < -47dBm
...
UE_TX_POWER_102: 31dBm ≤ UE_transmitted_power < 32dBm
UE_TX_POWER_103: 32dBm ≤ UE_transmitted_power < 33dBm
UE_TX_POWER_104: 33dBm ≤ UE_transmitted_power < 34dBm

9.2 Measurements Performance for UTRAN

9.2.1 Performance for UTRAN Measurements in Uplink (RX)

If not otherwise stated, the test parameters in table 9-16 should be applied for UE RX measurements requirements in this section.

Table 9-16 Intra frequency test parameters for UTRAN RX Measurements

Parameter	Unit	Cell 1
UTRA RF Channel number		Channel 1
Timeslot		[ ]
DPCH Ec/Ior	dB	[ ]
Îor/Ioc	dB	[ ]
Ioc	dBm/ 3.84 MHz	-89
Range: Io	dBm	-105..-74
Propagation condition	-	AWGN

9.2.1.1 RSCP

9.2.1.1.1 Absolute accuracy requirements

Table 9-17 RSCP Intra frequency absolute accuracy

Parameter	Unit	Accuracy	
		Normal conditions	Extreme conditions

RSCP	dB	+/-6dB	+/-9dB

9.2.1.1.2 Relative accuracy requirements

Table 9-18 RSCP Intra frequency relative accuracy

Parameter	Unit	Accuracy
RSCP	dB	+/-3dB for intra-frequency

9.2.1.1.3 Range/mapping

RSCP is given with a resolution of 0.5 dB with the range [-120, ..., -80] dBm.
RSCP shall be reported in the unit RSCP_LEV where:

RSCP_LEV_00:			RSCP < -120.0dBm
RSCP_LEV_01:	-120.0dBm	≤	RSCP < -119.5dBm
RSCP_LEV_02:	-119.5dBm	≤	RSCP < -119.0dBm
...			
RSCP_LEV_79:	-81.0dBm	≤	RSCP < -80.5dBm
RSCP_LEV_80:	-80.5dBm	≤	RSCP < -80.0dBm
RSCP_LEV_81:	-80.0dBm	≤	RSCP

9.2.1.2 Timeslot ISCP

9.2.1.2.1 Absolute accuracy requirements

Table 9-19 Timeslot ISCP Intra frequency absolute accuracy

Parameter	Unit	Accuracy	
		Normal conditions	Extreme conditions
Timeslot ISCP	dB	+/-6dB	+/-9dB

9.2.1.2.2 Range/mapping

Timeslot ISCP is given with a resolution of 0.5 dB with the range [-120, ..., -80] dBm.
Timeslot ISCP shall be reported in the unit UTRAN_TS_ISCP_LEV where:

UTRAN_TS_ISCP_LEV_00:			Timeslot_ISCP < -120.0dBm
UTRAN_TS_ISCP_LEV_01:	-120.0dBm	≤	Timeslot_ISCP < -119.5dBm
UTRAN_TS_ISCP_LEV_02:	-119.5dBm	≤	Timeslot_ISCP < -119.0dBm
...			
UTRAN_TS_ISCP_LEV_79:	-81.0dBm	≤	Timeslot_ISCP < -80.5dBm
UTRAN_TS_ISCP_LEV_80:	-80.5dBm	≤	Timeslot_ISCP < -80.0dBm
UTRAN_TS_ISCP_LEV_81:	-80.0dBm	≤	Timeslot_ISCP

9.2.1.3 RSSI

9.2.1.3.1 Absolute accuracy requirements

Table 9-20 RSSI Intra frequency absolute accuracy

Parameter	Unit	Accuracy
RSSI	dB	+/-4dB

9.2.1.3.2 Range/mapping

RSSI is given with a resolution of 0.1dB with the range [-112, ..., -50] dBm.
RSSI shall be reported in the unit RSSI_LEV, where:

RSSI_LEV_000:			RSSI < -112.0dBm
RSSI_LEV_001:	-112.0dBm	≤	RSSI < –111.9dBm
RSSI_LEV_002:	-111.9dBm	≤	RSSI < –111.8dBm
...			
RSSI_LEV_619:	-50.2dBm	≤	RSSI < –50.1dBm
RSSI_LEV_620:	-50.1dBm	≤	RSSI < –50.0dBm
RSSI_LEV_621:	-50.0dBm	≤	RSSI

9.2.1.4 SIR

9.2.1.4.1 Absolute accuracy requirements

Table 9-21 SIR Intra frequency absolute accuracy

Parameter	Unit	Accuracy
SIR	dB	+/-3dB for 0<SIR<10 dB

9.2.1.4.2 Range/mapping

SIR is given with a resolution of 0.5 dB with the range [-11, ..., 20] dB.
SIR shall be reported in the unit UTRAN_SIR where:

UTRAN_SIR_00:			SIR < -11.0dB
UTRAN_SIR_01:	-11.0dB	≤	SIR < -10.5dB
UTRAN_SIR_02:	-10.5dB	≤	SIR < -10.0dB
....			
UTRAN_SIR_61:	19.0dB	≤	SIR < 19.5dB
UTRAN_SIR_62:	19.5dB	≤	SIR < 20.0dB
UTRAN_SIR_63:	20.0dB	≤	SIR

9.2.1.5 Physical channel BER

The measurement period shall be equal to the [TTI] of the transport channel.

9.2.1.5.1 Accuracy requirement

Table 9-22 Physical channel BER Intra frequency accuracy

Parameter	Unit	Accuracy
BER		+/- 10% of the absolute BER value

9.2.1.5.2 Range/mapping

Physical channel BER is given with a logarithmic resolution of 0.008125 within the range [10^-2.06375 ... 1] with two separate cases Physical channel BER=0 and Physical channel BER between 0 and 10^-2.06375..
Physical channel BER shall be reported in the unit BER_LOG, where:

BER_LOG_000:	Physical channel BER = 0		
BER_LOG_001:	-∞	< Log10(Physical channel BER) <	-2.06375
BER_LOG_002:	-2.06375	≤ Log10(Physical channel BER) <	-2.055625
BER_LOG_003:	-2.055625	≤ Log10(Physical channel BER) <	-2.0475
...			
BER_LOG_253:	-0.024375	≤ Log10(Physical channel BER) <	-0.01625
BER_LOG_254:	-0.01625	≤ Log10(Physical channel BER) <	-0.008125
BER_LOG_255:	-0.008125	≤ Log10(Physical channel BER) ≤	0.000

~~9.2.1.6 Transport channel BLER~~

~~9.2.1.6.1 Accuracy requirement~~

~~Table 9-23 Transport channel BLER accuracy~~

~~Parameter~~	~~Unit~~	~~Accuracy~~
~~*TrpBLER*~~	~~-~~	~~[-]~~

~~9.2.1.6.2 Range/mapping~~

~~Transport channel BLER is given with a logarithmic resolution of 0.065 with the range [10^-4.03 ... 1] including a separate case Transport channel BLER=0.~~
~~Transport channel BLER shall be reported in the unit BLER_LOG, where:~~

~~BLER_LOG_00:~~	~~BLER = 0~~		
~~BLER_LOG_01:~~	~~-∞~~	~~< Log10(Transport channel BLER) <~~	~~-4.030~~
~~BLER_LOG_02:~~	~~-4.030~~	~~≤ Log10(Transport channel BLER) <~~	~~-3.965~~
~~BLER_LOG_03:~~	~~-3.965~~	~~≤ Log10(Transport channel BLER) <~~	~~-3.900~~
~~...~~			
~~BLER_LOG_61:~~	~~-0.195~~	~~≤ Log10(Transport channel BLER) <~~	~~-0.130~~
~~BLER_LOG_62:~~	~~-0.130~~	~~≤ Log10(Transport channel BLER) <~~	~~-0.065~~
~~BLER_LOG_63:~~	~~-0.065~~	~~≤ Log10(Transport channel BLER) ≤~~	~~0.000~~

9.2.1.7 Transport Channel BER

The measurement period shall be equal to the [TTI] of the transport channel.

9.2.1.7.1 Accuracy requirement

Table 9-24 Transport channel BER accuracy

Parameter	Unit	Accuracy
TrpBER	-	+/- []% of the absolute BER value

9.2.1.7.2 Range/mapping

Transport channel BER is given with a logarithmic resolution of 0.008125 within the range [10^-2.06375 ... 1] with two separate cases Transport channel BER=0 and Transport channel BER between 0 and 10^-2.06375..
Transport channel BER shall be reported in the unit TrCH_BER_LOG, where:

TrCH_BER_LOG_000:	Transport channel BER = 0		
TrCH_BER_LOG_001:	-∞	< Log10(Transport channel BER) <	-2.06375
TrCH_BER_LOG_002:	-2.06375	≤ Log10(Transport channel BER) <	-2.055625
TrCH_BER_LOG_003:	-2.055625	≤ Log10(Transport channel BER) <	-2.0475
...			
TrCH_BER_LOG_253:	-0.024375	≤ Log10(Transport channel BER) <	-0.01625
TrCH_BER_LOG_254:	-0.01625	≤ Log10(Transport channel BER) <	-0.008125
TrCH_BER_LOG_255:	-0.008125	≤ Log10(Transport channel BER) ≤	0.000

9.2.1.8 RX Timing Deviation

9.2.1.8.1 Accuracy requirements

Table 9-25 RX Timing Deviation accuracy

Parameter	Unit	Accuracy
RX Timing Deviation	-chips period	+/-0.5

9.2.1.8.2 Range/mapping

RX Timing Deviation is given with a resolution of 0.25 chip with the range [-256; 256) chips (11 bit).
RX Timing Deviation cell shall be reported in the unit RX_TIME_DEV, where
RX_TIME_DEV: (N* 0.25 –256) chips ≤ RX Timing Deviation < ((N+1)* 0.25 –256) chips
With N= 0, 1, 2, ..., 2047

Note: This measurement can be used for timing advance calculation or location services.

9.2.2 Performance for UTRAN Measurements in Downlink (TX)

The output power is defined as the average power of the transmit timeslot, and is measured with a filter that has a Root-Raised Cosine (RRC) filter response with a roll off $\alpha = 0.22$ and a bandwidth equal to the chip rate.

9.2.2.1 Transmitted carrier power

9.2.2.1.1 Accuracy requirements

Table 9-26 Transmitted carrier power accuracy

Parameter	Unit	Accuracy
Transmitted carrier power	-	±10% in the range 10% ≤ TX carrier power ratio ≤90%

9.2.2.1.2 Range/mapping

Transmitted carrier power is given with a resolution of 1% with the range [0, ..., 100] %.
Transmitted carrier power shall be reported in the unit UTRAN_TX_POWER, where:
UTRAN_TX_POWER_000: Transmitted carrier power = 0%
UTRAN_TX_POWER_001: 0% < Transmitted carrier power ≤ 1%
UTRAN_TX_POWER_002: 1% < Transmitted carrier power ≤ 2%
UTRAN_TX_POWER_003: 2% < Transmitted carrier power ≤ 3%
...
UTRAN_TX_POWER_098: 97% < Transmitted carrier power ≤ 98%
UTRAN_TX_POWER_099: 98% < Transmitted carrier power ≤ 99%
UTRAN_TX_POWER_100: 99% < Transmitted carrier power ≤ 100%

9.2.2.2 Transmitted code power

9.2.2.2.1 Absolute accuracy requirements

Table 9-27 Transmitted code power absolute accuracy

Parameter	Unit	Accuracy
Transmitted code power	dB	[+/-3]dB

9.2.2.2.2 Relative accuracy requirements

Table 9-28 Transmitted code power relative accuracy

Parameter	Unit	Accuracy
Transmitted code power	dB	+/-2dB

9.2.2.2.3 Range/mapping

Transmitted code power is given with a resolution of 0.5dB with the range [-10, ..., 46] dBm. Transmitted code power shall be reported in the unit UTRAN_TX_CODE_POWER, where: UTRAN_TX_CODE_POWER_000 to UTRAN_TX_POWER_009: reserved UTRAN_TX_ CODE_POWER_010: -10.0dBm ≤ CODE_POWER < -9.5dBm UTRAN_TX_ CODE_POWER_011: -9.5dBm ≤ CODE_POWER < -8.5dBm UTRAN_TX_ CODE_POWER_012: -8.5dBm ≤ CODE_POWER < -7.5dBm ... UTRAN_TX_ CODE_POWER_120: 45.0dBm ≤ CODE_POWER < 45.5dBm UTRAN_TX_ CODE_POWER_121: 45.5dBm ≤ CODE_POWER < 46.0dBm UTRAN_TX_ CODE_POWER_122: 46.0dBm ≤ CODE_POWER < 46.5dBm

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Proposed change affects: (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: RAN WG4 **Date:** 08/09/2000

Subject: Accuracy requirements for Node-B synchronisation

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Minimum Node-B synchronisation accuracy is required for proper network operation.

Clauses affected:

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications	X	→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

8 Timing characterisitics

8.1 Timing Advance (TA) Requirements

To update timing advance of a moving UE the UTRAN measures 'RX Timing deviation'. The measurements are reported to higher layers, where timing advance values are calculated and signaled to the UE. The measurement for timing advance is defined inTS25.225 "Physical Layer Measurements (TDD)", the requirements on the measurement is specified in section 11.2.9 'RX Timing Deviation'. The UE shall adjust the timing of its transmissions within ±0.5 chip of the signalled timing advance value.

8.2 Cell Synchronisation Accuracy

8.2.1 Definition

Cell synchronisation accuracy is defined as the maximum deviation in frame start times between any pair of cells that have overlapping coverage areas.

8.2.2 Minimum Requirements

The cell synchronisation accuracy shall be better than or equal to 3μs.

9 Measurements Performance Requirements

One of the key services provided by the physical layer is the measurement of various quantities which are used to trigger or perform a multitude of functions. Both the UE and the UTRAN are required to perform a variety of measurements. The complete list of measurements is specified in TSG RAN WG2 S25.302 "Services Provided by Physical Layer". The physical layer measurements for TDD are described and defined in TSG RAN WG1 TS25.225 “Physical layer – Measurements (TDD)”. In this section for TDD, per each measurement the relevant requirements on performance in terms of accuracy are reported.

Unless explicitly stated,

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25.123	CR	26	Current Version:	V3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN#9	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME	X	UTRAN / Radio	X	Core Network	

Source: RAN WG4 **Date:** 04.09.2000

Subject: Alignment of TDD measurements with FDD: GPS related measurements

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Introduction of GPS related measurements in TDD UE and UTRAN

Clauses affected:

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments: See CR215-012 (R1-00-0922) approved by WG1#14 for inclusion in TS 25.225
Revised document R4-000687 taking into account the WG4#13 decission on granularity of the reporting to be 0.0625

9.1.1.9 UE GPS Timing of Cell Frames for LCS

9.1.1.9.1 Accuracy requirement

Only necessary for UEs supporting LCS.

Parameter	Unit	Accuracy
UE GPS timing of Cell Frames for LCS	chips period	[ ]

9.1.1.9.2 UE GPS timing of Cell Frames for LCS measurement report mapping

The reporting range is for UE GPS timing of Cell Frames for LCS is from 0 ... 2319360000000 chip.

Reported value	Measured quantity value	Unit
GPS_TIME_00000000000000	UE GPS timing of Cell Frames for LCS < 0.0625~~125~~	chip
GPS_TIME_00000000000001	0.0625~~125~~ ≤ UE GPS timing of Cell Frames for LCS < 0.1250~~250~~	chip
GPS_TIME_00000000000002	0.1250~~250~~ ≤ UE GPS timing of Cell Frames for LCS < 0.1875~~375~~	chip
GPS_TIME_3710975~~1855487~~9999997	2319359999999.8125~~625~~ ≤ UE GPS timing of Cell Frames for LCS < 2319359999999.8750~~750~~	chip
GPS_TIME_3710975~~1855487~~9999998	2319359999999. 8750~~750~~ ≤ UE GPS timing of Cell Frames for LCS < 2319359999999. 9375~~875~~	chip
GPS_TIME_3710975~~1855487~~9999999	2319 359999 999. 9375~~875~~ ≤ UE GPS timing of Cell Frames for LCS < 2319360000000.0000	chip

9.2.1.9 UTRAN GPS Timing of Cell Frames for LCS

9.2.1.9.1 Accuracy requirement

Only necessary for UEs supporting LCS.

Parameter	Unit	Accuracy
UTRAN GPS timing of Cell Frames for LCS	chips period	[ ]

9.2.1.9.2 UTRAN GPS timing of Cell Frames for LCS measurement report mapping

The reporting range is for UTRAN GPS timing of Cell Frames for LCS is from 0 ... 2319360000000 chip.

Reported value	Measured quantity value	Unit
GPS_TIME_00000000000000	UTRAN GPS timing of Cell Frames for LCS < 0. 0625~~125~~	chip
GPS_TIME_00000000000001	0. 0625~~125~~ ≤ UTRAN GPS timing of Cell Frames for LCS < 0. 1250~~250~~	chip
GPS_TIME_00000000000002	0. 1250~~250~~ ≤ UTRAN GPS timing of Cell Frames for LCS < 0. 1875~~375~~	chip
…	…	…
GPS_TIME_3710975~~1855487~~9999997	2319359999999. 8125~~625~~ ≤ UTRAN GPS timing of Cell Frames for LCS < 2319359999999. 8750~~750~~	chip
GPS_TIME_3710975~~1855487~~9999998	2319359999999. 8750~~750~~ ≤ UTRAN GPS timing of Cell Frames for LCS < 2319359999999. 9375~~875~~	chip
GPS_TIME_3710975~~1855487~~9999999	2319 359999 999. 9375~~875~~ ≤ UTRAN GPS timing of Cell Frames for LCS < 2319360000000.0000	chip