TSG-RAN Meeting #7 ***RP-000066***
Madrid, Spain, 13 – 15 March 2000

Title: **Agreed CRs to TS 25.215**

Source: **TSG-RAN WG1**

Agenda item: **6.1.3**

No.	Doc #	Spec	CR	Rev	Subject	Cat	Versio	Versio
1	R1-000307	25.215	024	1	Definition of Transmitted carrier power	F	3.1.1	3.2.0
2	R1-000042	25.215	025	-	Clarification of Observed time difference to GSM	F	3.1.1	3.2.0
3	R1-000044	25.215	027	-	Naming of BER/BLER mapping	F	3.1.1	3.2.0
4	R1-000045	25.215	028	-	Minor corrections in TS 25.215	F	3.1.1	3.2.0
5	R1-000046	25.215	029	-	Re-definition of timing measurements	F	3.1.1	3.2.0
6	R1-000448	25.215	030	2	Mapping of timing measurements	F	3.1.1	3.2.0
7	R1-000048	25.215	031	-	Removal of note in Round trip time measurement	F	3.1.1	3.2.0
8	R1-000249	25.215	033	-	Removal of fixed gap position in 25.215	C	3.1.1	3.2.0
9	R1-000342	25.215	036	4	Corrections to 25.215 compressed mode	F	3.1.1	3.2.0
10	R1-000438	25.215	037	3	Definition and range of physical channel BER	F	3.1.1	3.2.0
11	R1-000309	25.215	040	-	Clarification of CPICH measurements in Tx	F	3.1.1	3.2.0
12	R1-000435	25.215	042	1	UTRAN RSSI measurement	F	3.1.1	3.2.0
13	R1-000332	25.215	043	1	UTRAN Propagation delay	B	3.1.1	3.2.0
14	R1-000447	25.215	044	2	Correction to sections: 5.1.15 UE GPS Timing of	F	3.1.1	3.2.0
15	R1-000348	25.215	047	-	Removal of RSCP measurement	F	3.1.1	3.2.0
16	R1-000407	25.215	048	-	UE BER measurement removal and clarification	C	3.1.1	3.2.0

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25.215 CR 024r1 Current Version: 3.1.0

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

For submission to: TSG-RAN #7 — for approval [X] / for information [ ] — strategic [ ] / non-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 WG1 **Date:** 2000-02-24

Subject: Definition of Transmitted carrier power

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: In TS 25.302 v3.x.y the UTRAN measurement Transmitted carrier power has been redefined. In the new definition the Transmitted carrier power shall be reported as the ratio between the transmitted power on one carrier and the maximum power possible to use on that carrier. This CR will introduce this change in TS 25.215 section 5.2.3.

Clauses affected: 5.2.3 Transmitted carrier power

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:

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5.2.3 Transmitted carrier power

Definition	Transmitted carrier power, is the ratio between the total transmitted power and the maximum transmission power. Total transmission power is the mean power [W] on one carrier from one UTRAN access point. Maximum transmission power is the mean power [W] on one carrier from one UTRAN access point when transmitting at the configured maximum power for the cell. Measurement shall be possible on any carrier transmitted from the UTRAN access point. The reference point for the ~~total~~ transmitted carrier power measurement shall be the antenna connector. In case of Tx diversity the ~~total~~ transmitted carrier power for each branch shall be measured.
Range/mapping	Transmitted carrier power is given with a resolution of 1~~0.5~~ %-unit~~dB~~ with the range [0, ..., ~~5~~100] %~~dBm~~ Transmitted carrier power shall be reported in the unit UTRAN_TX_POWER where: ~~UTRAN_TX_POWER _016: 0.0 dBm ≤ Transmitted carrier power < 0.5 dBm~~ ~~UTRAN_TX_POWER _017: 0.5 dBm ≤ Transmitted carrier power < 1.0 dBm~~ ~~UTRAN_TX_POWER _018: 1.0 dBm ≤ Transmitted carrier power < 1.5 dBm~~ ~~...~~ ~~UTRAN_TX_POWER _114 49.0 dBm ≤ Transmitted carrier power < 49.5 dBm~~ ~~UTRAN_TX_POWER _115: 49.5 dBm ≤ Transmitted carrier power < 50.0 dBm~~ ~~UTRAN_TX_POWER _116: 50.0 dBm ≤ Transmitted carrier power < 50.5 dBm~~ 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 %

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25.215 CR 025 Current Version: 3.1.0

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

For submission to: TSG-RAN #7
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for approval	X	strategic		*(for SMG use only)*
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Proposed change affects: (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG RAN WG1 **Date:** 1999-12-27

Subject: Clarification of Observed time difference to GSM cell

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: At RAN#6 it was requested to clarify the meaning of "beginning of GSM BCCH 51-multiframe" in the definition of the measurement "Observed time difference to GSM" cell in TS 25.215. This CR clarifies that.

Clauses affected: 5.1.14 Observed time difference to GSM cell

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:

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5.1.14 Observed time difference to GSM cell

Definition	The Observed time difference to GSM cell is defined as: T_{RxGSMj} - T_{RxSFNi}, where: T_{RxSFNi} is the time at the beginning of the P-CCPCH frame with SFN=0 from cell i. T_{RxGSMj} is the time at the beginning of the GSM BCCH 51-multiframe from GSM frequency j received closest in time after the time T_{RxSFNi}. If the next GSM multiframe is received exactly at T_{RxSFNi} then $T_{RxGSMj} = T_{RxSFNi}$ (which leads to T_{RxGSMj} - T_{RxSFNi} = 0). The timing measurement shall reflect the timing situation when the most recent (in time) P-CCPCH with SFN=0 was received in the UE. The beginning of the GSM BCCH 51-multiframe is defined as the beginning of the first tail bit of the frequency correction burst in the first TDMA-frame of the GSM BCCH 51-multiframe, i.e. the TDMA-frame following the IDLE-frame.
Applicable for	Idle, Connected Inter
Range/mapping	The Observed time difference to GSM cell is given with the resolution of 3060/(4096*13) ms with the range [0, …, 3060/13-3060/(4096*13)] ms.

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25.215 CR 027 Current Version: 3.1.0

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

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for approval	X	strategic		*(for SMG use only)*
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: (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG RAN WG1 **Date:** 1999-12-27

Subject: Naming of BER/BLER mapping

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 usage of the term dB is commonly used to indicate 10*Log(P1/P2). In the definition of the mapping for Transport channel BLER and Physical channel BER in TS 25.215, the term dB is used to indicate that the mapping is made in a logarithmic scale. However the mapping is not made using 10 times log as normally used in the definition of the dB-scale. To avoid confusion this CR proposes to replace the term “dB” with the term “LOG” in the definition of the mapping for the BLER and BER measurements in TS 25.215.

Clauses affected: 5.1.8 Transport channel BLER, 5.1.9 Physical channel BER, 5.2.5 Transport channel BLER, 5.2.6 Physical channel BER

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:

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5.1.8 Transport channel BLER

Definition	Estimation of the transport channel block error rate (BLER). The BLER estimation shall be based on evaluating the CRC on each transport block after RL combination. BLER estimation is only required for transport channels containing CRC. In connected mode the BLER shall be possible to measure on any transport channel. If requested in idle mode it shall be possible to measure the BLER on transport channel PCH.
Applicable for	Idle, Connected Intra
Range/mapping	The Transport channel BLER shall be reported for 0 ≤ Transport channel BLER ≤ 1 in the unit BLER_~~dB~~LOG where: BLER_~~dB~~LOG_00: Transport channel BLER = 0 BLER_~~dB~~LOG_01: -∞ < Log10(Transport channel BLER) < -4.03 BLER_~~dB~~LOG_02: -4.03 ≤ Log10(Transport channel BLER) < -3.965 BLER_~~dB~~LOG_03: -3.965 ≤ Log10(Transport channel BLER) < -3.9 ... BLER_~~dB~~LOG_61: -0.195 ≤ Log10(Transport channel BLER) < -0.13 BLER_~~dB~~LOG_62: -0.13 ≤ Log10(Transport channel BLER) < -0.065 BLER_~~dB~~LOG_63: -0.065 ≤ Log10(Transport channel BLER) ≤ 0

5.1.9 Physical channel BER

Definition	The physical channel BER is an estimation of the average bit error rate (BER) before channel decoding of the DPDCH data after RL combination. At most it shall be possible to report a physical channel BER estimate at the end of each TTI for the transferred TrCh's, e.g. for TrCh's with a TTI of x ms a x ms averaged physical channel BER shall be possible to report every x ms.
Applicable for	Connected Intra
Range/mapping	The Physical channel BER shall be reported for 0 ≤ Physical channel BER ≤ 1 in the unit BER_~~dB~~LOG where: BER_~~dB~~LOG_00: Physical channel BER = 0 BER_~~dB~~LOG_01: -∞ < Log10(Physical channel BER) < -4.03 BER_~~dB~~LOG_02: -4.03 ≤ Log10(Physical channel BER) < -3.965 BER_~~dB~~LOG_03: -3.965 ≤ Log10(Physical channel BER) < -3.9 ... BER_~~dB~~LOG_61: -0.195 ≤ Log10(Physical channel BER) < -0.13 BER_~~dB~~LOG_62: -0.13 ≤ Log10(Physical channel BER) < -0.065 BER_~~dB~~LOG_63: -0.065 ≤ Log10(Physical channel BER) ≤ 0

5.1.10 UE transmitted power

Definition	The total UE transmitted power on one carrier. The reference point for the UE transmitted power shall be the UE antenna connector.
Applicable for	Connected Intra
Range/mapping	UE transmitted power is given with a resolution of 1 dB with the range [-50, ..., 33] dBm. UE transmitted power shall be reported in the unit UE_TX_POWER where: UE_TX_POWER _021: -50 dBm ≤ UE transmitted power < –49 dBm UE_TX_POWER _022: -49 dBm ≤ UE transmitted power < –48 dBm UE_TX_POWER _023: -48 dBm ≤ UE transmitted power < –47 dBm ... UE_TX_POWER _102 31 dBm ≤ UE transmitted power < 32 dBm UE_TX_POWER _103: 32 dBm ≤ UE transmitted power < 33 dBm UE_TX_POWER _104: 33 dBm ≤ UE transmitted power < 34 dBm

5.1.11 CFN-SFN observed time difference

Definition	The CFN-SFN observed time difference to cell is defined as: OFF×38400+ T_m, where: T_m= T_{RxSFN} - (T_{UETx}-T_0), given in chip units with the range [0, 1, …, 38399] chips T_{UETx} is the time when the UE transmits an uplink DPCCH/DPDCH frame. T_0 is defined in TS 25.211 section 7.1.3. T_{RxSFN} is time at the beginning of the next received neighbouring P-CCPCH frame after the time instant T_{UETx}-T_0in the UE. If the next neighbouring P-CCPCH frame is received exactly at T_{UETx}-T_0 then T_{RxSFN}=T_{UETx}-T_0 (which leads to T_m=0). and OFF=(CFN_{Tx}-SFN) mod 256, given in number of frames with the range [0, 1, …, 255] frames CFN_{Tx} is the connection frame number for the UE transmission of an uplink DPCCH/DPDCH frame at the time T_{UETx}. SFN = the system frame number for the neighbouring P-CCPCH frame received in the UE at the time T_{RxSFN}. In case the inter-frequency measurement is done with compressed mode, the value for the parameter OFF is always reported to be 0. In case that the SFN measurement indicator indicates that the UE does not need to read cell SFN of the target neighbour cell, the value of the parameter OFF is always be set to 0. *Note: In Compressed mode it is not required to read cell SFN of the target neighbour cell.*
Applicable for	Connected Inter, Connected Intra
Range/mapping	Time difference is given with the resolution of one chip with the range [0, …, 9830399] chips.

5.1.12 SFN-SFN observed time difference

Definition	**Type 1:** The SFN-SFN observed time difference to cell is defined as: OFF×38400+ T_m, where: T_m= T_{RxSFNi} - T_{RxSFNj}, given in chip units with the range [0, 1, …, 38399] chips T_{RxSFNj} is the time at the beginning of a received neighbouring P-CCPCH frame from cell j. T_{RxSFNi} is time at the beginning of the next received neighbouring P-CCPCH frame from cell i after the time instant T_{RxSFNj} in the UE. If the next neighbouring P-CCPCH frame is received exactly at T_{RxSFNj} then T_{RxSFNj}= T_{RxSFNi} (which leads to T_m=0). and OFF=(SFN_j- SFN_i) mod 256, given in number of frames with the range [0, 1, …, 255] frames SFN_j = the system frame number for downlink P-CCPCH frame from cell j in the UE at the time T_{RxSFNj}. SFN_i = the system frame number for the P-CCPCH frame from cell i received in the UE at the time T_{RxSFNi}. **Type 2:** The relative timing difference between cell j and cell i, defined as $T_{CPICHRxj}$ - $T_{CPICHRxi}$, where: $T_{CPICHRxj}$ is the time when the UE receives one Primary CPICH slot from cell j $T_{CPICHRxi}$ is the time when the UE receives the Primary CPICH slot from cell i that is closest in time to the Primary CPICH slot received from cell j
Applicable for	**Type 1:** Idle, Connected Intra **Type 2:** Idle, Connected Intra, Connected Inter
Range/mapping	**Type 1:** Time difference is given with a resolution of one chip with the range [0, …, 9830399] chips. **Type 2:** Time difference is given with a resolution of 0.25 chip with the range [-1279.75, …, 1280] chips.

5.1.13 UE Rx-Tx time difference

Definition	The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first significant path, of the downlink DPCH frame from the measured radio link. Measurement shall be made for each cell included in the active set. Note: The definition of "first significant path" needs further elaboration.
Applicable for	Connected Intra
Range/mapping	The UE Rx-Tx time difference is given with the resolution of 0.25 chip with the range [876, …, 1172] chips.

5.1.14 Observed time difference to GSM cell

Definition	The Observed time difference to GSM cell is defined as: T_{RxGSMj} - T_{RxSFNi}, where: T_{RxSFNi} is the time at the beginning of the P-CCPCH frame with SFN=0 from cell i. T_{RxGSMj} is the time at the beginning of the GSM BCCH 51-multiframe from GSM frequency j received closest in time after the time T_{RxSFNi}. If the next GSM multiframe is received exactly at T_{RxSFNi} then T_{RxGSMj} =T_{RxSFNi} (which leads to T_{RxGSMj} - T_{RxSFNi} = 0). The timing measurement shall reflect the timing situation when the most recent (in time) P-CCPCH with SFN=0 was received in the UE.
Applicable for	Idle, Connected Inter
Range/mapping	The Observed time difference to GSM cell is given with the resolution of 3060/(4096*13) ms with the range [0, …, 3060/13-3060/(4096*13)] ms.

5.1.15 UE GPS Timing of Cell Frames for LCS

Definition	The timing between cell j and GPS Time Of Week. $T_{UE-GPSj}$ is defined as the time of occurrence of a specified UTRAN event according to GPS time. The specified UTRAN event is the beginning of a particular frame (identified through its SFN) in the first significant multipath of the cell j CPICH, where cell j is a cell within the active set.
Applicable for	Connected Intra, Connected Inter
Range/mapping	The resolution of $T_{UE-GPSj}$ is 1µS. The range is from 0 to 6.04×10^{11} µS.

5.2 UTRAN measurement abilities

The structure of the table defining a UTRAN measurement quantity is shown below:

Column field	**Comment**
Definition	Contains the definition of the measurement.
Range/mapping	Gives the range and mapping to bits for the measurements quantity.

5.2.1 RSSI

Definition	Received Signal Strength Indicator, the wide-band received power within the UTRAN uplink carrier channel bandwidth in an UTRAN access point. The reference point for the RSSI measurements shall be the antenna connector.
Range/mapping	RSSI is given with a resolution of 0.5 dB with the range [-105, ..., -74] dBm. RSSI shall be reported in the unit RSSI_LEV where: RSSI_LEV _00: RSSI < –105.0 dBm RSSI_LEV _01: -105.0 dBm ≤ RSSI < –104.5 dBm RSSI_LEV _02: -104.5 dBm ≤ RSSI < –104.0 dBm ... RSSI_LEV _61: -73.0 dBm ≤ RSSI < -73.5 dBm RSSI_LEV _62: -73.5 dBm ≤ RSSI < -74.0 dBm RSSI_LEV _63: -74.0 dBm ≤ RSSI

5.2.2 SIR

Definition	Signal to Interference Ratio, is defined as: (RSCP/ISCP)×SF. Measurement shall be performed on the DPCCH after RL combination in Node B. The reference point for the SIR measurements shall be the antenna connector. where: RSCP = Received Signal Code Power, the received power on one code. ISCP = Interference Signal Code Power, the interference on the received signal. Only the non-orthogonal part of the interference is included in the measurement. SF=The spreading factor used on the DPCCH.
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 < –11.0 dB UTRAN_SIR_01: -11.0 dB ≤ SIR < –10.5 dB UTRAN_SIR_02: -10.5 dB ≤ SIR < –10.0 dB ... UTRAN_SIR_61: 19.0 dB ≤ SIR < 19.5 dB UTRAN_SIR_62: 19.5 dB ≤ SIR < 20.0 dB UTRAN_SIR_63: 20.0 dB ≤ SIR

5.2.3 Transmitted carrier power

Definition	Transmitted carrier power, is the total transmitted power on one carrier from one UTRAN access point. Measurement shall be possible on any carrier transmitted from the UTRAN access point. The reference point for the total transmitted power measurement shall be the antenna connector. In case of Tx diversity the total transmitted power for each branch shall be measured.
Range/mapping	Transmitted carrier power is given with a resolution of 0.5 dB with the range [0, ..., 50] dBm Transmitted carrier power shall be reported in the unit UTRAN_TX_POWER where: UTRAN_TX_POWER _016: 0.0 dBm ≤ Transmitted carrier power < 0.5 dBm UTRAN_TX_POWER _017: 0.5 dBm ≤ Transmitted carrier power < 1.0 dBm UTRAN_TX_POWER _018: 1.0 dBm ≤ Transmitted carrier power < 1.5 dBm ... UTRAN_TX_POWER _114 49.0 dBm ≤ Transmitted carrier power < 49.5 dBm UTRAN_TX_POWER _115: 49.5 dBm ≤ Transmitted carrier power < 50.0 dBm UTRAN_TX_POWER _116: 50.0 dBm ≤ Transmitted carrier power < 50.5 dBm

5.2.4 Transmitted code power

Definition	Transmitted code power, is the transmitted power on one channelisation code on one given scrambling code on one given carrier. Measurement shall be possible on any DPCH transmitted from the UTRAN access point and shall reflect the power on the pilot bits of the DPCH. The reference point for the transmitted code power measurement shall be the antenna connector. In case of Tx diversity the transmitted code power for each branch shall be measured.
Range/mapping	Transmitted code power is given with a resolution of 0.5 dB with the range [-10, ..., 46] dBm. Transmitted code power shall be reported in the unit UTRAN_CODE_POWER where: UTRAN_CODE_POWER _010: -10.0 dBm ≤ Transmitted code power < -9.5 dBm UTRAN_CODE_POWER _011: -9.5 dBm ≤ Transmitted code power < -9.0 dBm UTRAN_CODE_POWER _012: -9.0 dBm ≤ Transmitted code power < -8.5 dBm ... UTRAN_CODE_POWER _120 45.0 dBm ≤ Transmitted code power < 45.5 dBm UTRAN_CODE_POWER _121: 45.5 dBm ≤ Transmitted code power < 46.0 dBm UTRAN_CODE_POWER _122: 46.0 dBm ≤ Transmitted code power < 46.5 dBm

5.2.5 Transport channel BLER

Definition	Estimation of the transport channel block error rate (BLER). The BLER estimation shall be based on evaluating the CRC on each transport block. Measurement shall be possible to perform on any transport channel after RL combination in Node B. BLER estimation is only required for transport channels containing CRC.
Range/mapping	The Transport channel BLER shall be reported for 0 ≤ Transport channel BLER ≤ 1 in the unit BLER_~~dB~~LOG where: BLER_~~dB~~LOG_00: Transport channel BLER = 0 BLER_~~dB~~LOG_01: -∞ < Log10(Transport channel BLER) < -4.03 BLER_~~dB~~LOG_02: -4.03 ≤ Log10(Transport channel BLER) < -3.965 BLER_~~dB~~LOG_03: -3.965 ≤ Log10(Transport channel BLER) < -3.9 ... BLER_~~dB~~LOG_61: -0.195 ≤ Log10(Transport channel BLER) < -0.13 BLER_~~dB~~LOG_62: -0.13 ≤ Log10(Transport channel BLER) < -0.065 BLER_~~dB~~LOG_63: -0.065 ≤ Log10(Transport channel BLER) ≤ 0

5.2.6 Physical channel BER

Definition	Type 1: Measured on the DPDCH: The physical channel BER is an estimation of the average bit error rate (BER) before channel decoding of the DPDCH data after RL combination in Node B. Type 2: Measured on the DPCCH: The Physical channel BER is an estimation of the average bit error rate (BER) on the DPCCH after RL combination in Node B. It shall be possible to report a physical channel BER estimate of type 1 or of type 2 or of both types at the end of each TTI for the transferred TrCh's, e.g. for TrCh's with a TTI of x ms a x ms averaged physical channel BER shall be possible to report every x ms.
Range/mapping	The Physical channel BER shall be reported for 0 ≤ Physical channel BER ≤ 1 in the unit BER_~~dB~~LOG where: BER_~~dB~~LOG_00: Physical channel BER = 0 BER_~~dB~~LOG_01: -∞ < Log10(Physical channel BER) < -4.03 BER_~~dB~~LOG_02: -4.03 ≤ Log10(Physical channel BER) < -3.965 BER_~~dB~~LOG_03: -3.965 ≤ Log10(Physical channel BER) < -3.9 ... BER_~~dB~~LOG_61: -0.195 ≤ Log10(Physical channel BER) < -0.13 BER_~~dB~~LOG_62: -0.13 ≤ Log10(Physical channel BER) < -0.065 BER_~~dB~~LOG_63: -0.065 ≤ Log10(Physical channel BER) ≤ 0

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25.215 CR 028 Current Version: 3.1.0

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

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

Source: TSG RAN WG1 **Date:** 2000-01-10

Subject: Minor corrections in TS 25.215

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: In TS 25.215 some editorial errors has been found. This CR corrects these errors.

Clauses affected: 5.1.1 CPICH RSCP, 5.1.3 RSCP, 5.1.5 UTRA carrier RSSI, 5.2.1 RSSI

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:

help.doc

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

5.1.1 CPICH RSCP

Definition	Received Signal Code Power, the received power on one code measured on ~~the pilot bits of~~ the Primary CPICH. The reference point for the RSCP is the antenna connector at the UE.
Applicable for	Idle, Connected Intra, Connected Inter
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 < –115 dBm CPICH_RSCP_LEV _01: -115 dBm ≤ CPICH RSCP < –114 dBm CPICH_RSCP_LEV _02: -114 dBm ≤ CPICH RSCP < –113 dBm ... CPICH_RSCP_LEV _89: -27 dBm ≤ CPICH RSCP < -26 dBm CPICH_RSCP_LEV _90: -26 dBm ≤ CPICH RSCP < -25 dBm CPICH_RSCP_LEV _91: -25 dBm ≤ CPICH RSCP

5.1.2 PCCPCH RSCP

Definition	Received Signal Code Power, the received power on one code measured on the PCCPCH from a TDD cell. The reference point for the RSCP is the antenna connector at the UE. Note: The RSCP can either be measured on the data part or the midamble of a burst, since there is no power difference between these two parts. However, in order to have a common reference, measurement on the midamble is assumed.
Applicable for	Idle, Connected Inter
Range/mapping	PCCPCH RSCP is given with a resolution of 1 dB with the range [-115, ..., -25] dBm. PCCPCH RSCP shall be reported in the unit PCCPCH _RSCP_LEV where: PCCPCH _RSCP_LEV _00: PCCPCH RSCP < –115 dBm PCCPCH _RSCP_LEV _01: -115 dBm ≤ PCCPCH RSCP < –114 dBm PCCPCH _RSCP_LEV _02: -114 dBm ≤ PCCPCH RSCP < –113 dBm ... PCCPCH _RSCP_LEV _89: -27 dBm ≤ PCCPCH RSCP < -26 dBm PCCPCH _RSCP_LEV _90: -26 dBm ≤ PCCPCH RSCP < -25 dBm PCCPCH _RSCP_LEV _91: -25 dBm ≤ PCCPCH RSCP

5.1.3 RSCP

Definition	Received Signal Code Power, the received power on one code measured on the pilot bits of the DPCCH after RL combination. The reference point for the RSCP is the antenna connector at the UE.
Applicable for	Connected Intra
Range/mapping	~~RSCP is given with a resolution of 1 dB with the range [-115, ..., -40] dBm.~~ RSCP is given with a resolution of 1 dB with the range [-115, ..., -25] dBm. RSCP shall be reported in the unit RSCP_LEV where: RSCP_LEV _00: RSCP < –115 dBm RSCP_LEV _01: -115 dBm ≤ RSCP < –114 dBm RSCP_LEV _02: -114 dBm ≤ RSCP < –113 dBm ... RSCP_LEV _89: -27 dBm ≤ RSCP < -26 dBm RSCP_LEV _90: -26 dBm ≤ RSCP < -25 dBm RSCP_LEV _91: -25 dBm ≤ RSCP

5.1.4 SIR

Definition	Signal to Interference Ratio, defined as: (RSCP/ISCP)×(SF/2). The SIR shall be measured on DPCCH after RL combination. The reference point for the SIR is the antenna connector of the UE. where: RSCP = Received Signal Code Power, the received power on one code measured on the pilot bits. ISCP = Interference Signal Code Power, the interference on the received signal measured on the pilot bits. Only the non-orthogonal part of the interference is included in the measurement. SF=The spreading factor used.
Applicable for	Connected Intra
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 < –11.0 dB UE_SIR_01: -11.0 dB ≤ SIR < –10.5 dB UE_SIR_02: -10.5 dB ≤ SIR < –10.0 dB ... UE_SIR_61: 19.0 dB ≤ SIR < 19.5 dB UE_SIR_62: 19.5 dB ≤ SIR < 20.0 dB UE_SIR_63: 20.0 dB ≤ SIR

5.1.5 UTRA carrier RSSI

Definition	Received Signal Strength Indicator, the wide-band received power within the relevant channel bandwidth. Measurement shall be performed on a UTRAN downlink carrier. The reference point for the RSSI is the antenna connector at the UE.
Applicable for	Idle, Connected Intra, Connected Inter
Range/mapping	UTRA carrier RSSI is given with a resolution of 1 dB with the range [-94, ..., -32] dBm. UTRA carrier RSSI shall be reported in the unit UTRA_carrier_RSSI_LEV where: UTRA_carrier_RSSI_LEV _00: UTRA carrier RSSI < –94 dBm UTRA_carrier_RSSI_LEV _01: -94 dBm ≤ UTRA carrier RSSI < –93 dBm UTRA_carrier_RSSI_LEV _02: -93 dBm ≤ UTRA carrier RSSI < –92 dBm ... UTRA_carrier_RSSI_LEV _61: -3<u>4</u>~~2~~ dBm ≤ UTRA carrier RSSI < -33 dBm UTRA_carrier_RSSI_LEV _62: -33 dBm ≤ UTRA carrier RSSI < -32 dBm UTRA_carrier_RSSI_LEV _63: -32 dBm ≤ UTRA carrier RSSI

5.1.6 GSM carrier RSSI

Definition	Received Signal Strength Indicator, the wide-band received power within the relevant channel bandwidth. Measurement shall be performed on a GSM BCCH carrier. The reference point for the RSSI is the antenna connector at the UE.
Applicable for	Idle, Connected Inter
Range/mapping	According to the definition of RXLEV in GSM 05.08.

5.1.7 CPICH Ec/No

Definition	The received energy per chip divided by the power density in the band. The Ec/No is identical to RSCP/RSSI. Measurement shall be performed on the Primary CPICH. The reference point for Ec/No is the antenna connector at the UE.
Applicable for	Idle, Connected Intra, Connected Inter
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 < –24 dB CPICH_Ec/No _01: -24 dB ≤ CPICH Ec/No < –23 dB CPICH_Ec/No _02: -23 dB ≤ CPICH Ec/No < –22 dB ... CPICH_Ec/No _23: -2 dB ≤ CPICH Ec/No < -1 dB CPICH_Ec/No _24: -1 dB ≤ CPICH Ec/No < 0 dB CPICH_Ec/No _25: 0 dB ≤ CPICH Ec/No

5.1.8 Transport channel BLER

Definition	Estimation of the transport channel block error rate (BLER). The BLER estimation shall be based on evaluating the CRC on each transport block after RL combination. BLER estimation is only required for transport channels containing CRC. In connected mode the BLER shall be possible to measure on any transport channel. If requested in idle mode it shall be possible to measure the BLER on transport channel PCH.
Applicable for	Idle, Connected Intra
Range/mapping	The Transport channel BLER shall be reported for 0 ≤ Transport channel BLER ≤ 1 in the unit BLER_dB where: BLER_dB_00: Transport channel BLER = 0 BLER_dB_01: -∞ < Log10(Transport channel BLER) < -4.03 BLER_dB_02: -4.03 ≤ Log10(Transport channel BLER) < -3.965 BLER_dB_03: -3.965 ≤ Log10(Transport channel BLER) < -3.9 ... BLER_dB_61: -0.195 ≤ Log10(Transport channel BLER) < -0.13 BLER_dB_62: -0.13 ≤ Log10(Transport channel BLER) < -0.065 BLER_dB_63: -0.065 ≤ Log10(Transport channel BLER) ≤ 0

5.1.9 Physical channel BER

Definition	The physical channel BER is an estimation of the average bit error rate (BER) before channel decoding of the DPDCH data after RL combination. At most it shall be possible to report a physical channel BER estimate at the end of each TTI for the transferred TrCh's, e.g. for TrCh's with a TTI of x ms a x ms averaged physical channel BER shall be possible to report every x ms.
Applicable for	Connected Intra
Range/mapping	The Physical channel BER shall be reported for 0 ≤ Physical channel BER ≤ 1 in the unit BER_dB where: BER_dB_00: Physical channel BER = 0 BER_dB_01: -∞ < Log10(Physical channel BER) < -4.03 BER_dB_02: -4.03 ≤ Log10(Physical channel BER) < -3.965 BER_dB_03: -3.965 ≤ Log10(Physical channel BER) < -3.9 ... BER_dB_61: -0.195 ≤ Log10(Physical channel BER) < -0.13 BER_dB_62: -0.13 ≤ Log10(Physical channel BER) < -0.065 BER_dB_63: -0.065 ≤ Log10(Physical channel BER) ≤ 0

5.1.10 UE transmitted power

Definition	The total UE transmitted power on one carrier. The reference point for the UE transmitted power shall be the UE antenna connector.
Applicable for	Connected Intra
Range/mapping	UE transmitted power is given with a resolution of 1 dB with the range [-50, ..., 33] dBm. UE transmitted power shall be reported in the unit UE_TX_POWER where: UE_TX_POWER _021: -50 dBm ≤ UE transmitted power < –49 dBm UE_TX_POWER _022: -49 dBm ≤ UE transmitted power < –48 dBm UE_TX_POWER _023: -48 dBm ≤ UE transmitted power < –47 dBm ... UE_TX_POWER _102 31 dBm ≤ UE transmitted power < 32 dBm UE_TX_POWER _103: 32 dBm ≤ UE transmitted power < 33 dBm UE_TX_POWER _104: 33 dBm ≤ UE transmitted power < 34 dBm

5.1.11 CFN-SFN observed time difference

Definition	The CFN-SFN observed time difference to cell is defined as: OFF×38400+ T_m, where: T_m= T_{RxSFN} - (T_{UETx}-T_0), given in chip units with the range [0, 1, …, 38399] chips T_{UETx} is the time when the UE transmits an uplink DPCCH/DPDCH frame. T_0 is defined in TS 25.211 section 7.1.3. T_{RxSFN} is time at the beginning of the next received neighbouring P-CCPCH frame after the time instant T_{UETx}-T_0in the UE. If the next neighbouring P-CCPCH frame is received exactly at T_{UETx}-T_0 then T_{RxSFN}=T_{UETx}-T_0 (which leads to T_m=0). and OFF=(CFN_{Tx}-SFN) mod 256, given in number of frames with the range [0, 1, …, 255] frames CFN_{Tx} is the connection frame number for the UE transmission of an uplink DPCCH/DPDCH frame at the time T_{UETx}. SFN = the system frame number for the neighbouring P-CCPCH frame received in the UE at the time T_{RxSFN}. In case the inter-frequency measurement is done with compressed mode, the value for the parameter OFF is always reported to be 0. In case that the SFN measurement indicator indicates that the UE does not need to read cell SFN of the target neighbour cell, the value of the parameter OFF is always be set to 0. *Note: In Compressed mode it is not required to read cell SFN of the target neighbour cell.*
Applicable for	Connected Inter, Connected Intra
Range/mapping	Time difference is given with the resolution of one chip with the range [0, …, 9830399] chips.

5.1.12 SFN-SFN observed time difference

Definition	**Type 1:** The SFN-SFN observed time difference to cell is defined as: OFF×38400+ T_m, where: T_m= T_{RxSFNi} - T_{RxSFNj}, given in chip units with the range [0, 1, …, 38399] chips T_{RxSFNj} is the time at the beginning of a received neighbouring P-CCPCH frame from cell j. T_{RxSFNi} is time at the beginning of the next received neighbouring P-CCPCH frame from cell i after the time instant T_{RxSFNj} in the UE. If the next neighbouring P-CCPCH frame is received exactly at T_{RxSFNj} then T_{RxSFNj}= T_{RxSFNi} (which leads to T_m=0). and OFF=(SFN_j- SFN_i) mod 256, given in number of frames with the range [0, 1, …, 255] frames SFN_j = the system frame number for downlink P-CCPCH frame from cell j in the UE at the time T_{RxSFNj}. SFN_i = the system frame number for the P-CCPCH frame from cell i received in the UE at the time T_{RxSFNi}. **Type 2:** The relative timing difference between cell j and cell i, defined as $T_{CPICHRxj}$ - $T_{CPICHRxi}$, where: $T_{CPICHRxj}$ is the time when the UE receives one Primary CPICH slot from cell j $T_{CPICHRxi}$ is the time when the UE receives the Primary CPICH slot from cell i that is closest in time to the Primary CPICH slot received from cell j
Applicable for	**Type 1:** Idle, Connected Intra **Type 2:** Idle, Connected Intra, Connected Inter
Range/mapping	**Type 1:** Time difference is given with a resolution of one chip with the range [0, …, 9830399] chips. **Type 2:** Time difference is given with a resolution of 0.25 chip with the range [-1279.75, …, 1280] chips.

5.1.13 UE Rx-Tx time difference

Definition	The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first significant path, of the downlink DPCH frame from the measured radio link. Measurement shall be made for each cell included in the active set. Note: The definition of "first significant path" needs further elaboration.
Applicable for	Connected Intra
Range/mapping	The UE Rx-Tx time difference is given with the resolution of 0.25 chip with the range [876, …, 1172] chips.

5.1.14 Observed time difference to GSM cell

Definition	The Observed time difference to GSM cell is defined as: T_{RxGSMj} - T_{RxSFNi}, where: T_{RxSFNi} is the time at the beginning of the P-CCPCH frame with SFN=0 from cell i. T_{RxGSMj} is the time at the beginning of the GSM BCCH 51-multiframe from GSM frequency j received closest in time after the time T_{RxSFNi}. If the next GSM multiframe is received exactly at T_{RxSFNi} then T_{RxGSMj} =T_{RxSFNi} (which leads to T_{RxGSMj} - T_{RxSFNi} = 0). The timing measurement shall reflect the timing situation when the most recent (in time) P-CCPCH with SFN=0 was received in the UE.
Applicable for	Idle, Connected Inter
Range/mapping	The Observed time difference to GSM cell is given with the resolution of 3060/(4096*13) ms with the range [0, …, 3060/13-3060/(4096*13)] ms.

5.1.15 UE GPS Timing of Cell Frames for LCS

Definition	The timing between cell j and GPS Time Of Week. $T_{UE-GPSj}$ is defined as the time of occurrence of a specified UTRAN event according to GPS time. The specified UTRAN event is the beginning of a particular frame (identified through its SFN) in the first significant multipath of the cell j CPICH, where cell j is a cell within the active set.
Applicable for	Connected Intra, Connected Inter
Range/mapping	The resolution of $T_{UE-GPSj}$ is 1µS. The range is from 0 to 6.04×10^{11} µS.

5.2 UTRAN measurement abilities

The structure of the table defining a UTRAN measurement quantity is shown below:

Column field	**Comment**
Definition	Contains the definition of the measurement.
Range/mapping	Gives the range and mapping to bits for the measurements quantity.

5.2.1 RSSI

Definition	Received Signal Strength Indicator, the wide-band received power within the UTRAN uplink carrier channel bandwidth in an UTRAN access point. The reference point for the RSSI measurements shall be the antenna connector.
Range/mapping	RSSI is given with a resolution of 0.5 dB with the range [-105, ..., -74] dBm. RSSI shall be reported in the unit RSSI_LEV where: RSSI_LEV _00: RSSI < –105.0 dBm RSSI_LEV _01: -105.0 dBm ≤ RSSI < –104.5 dBm RSSI_LEV _02: -104.5 dBm ≤ RSSI < –104.0 dBm ... RSSI_LEV _61: -75~~3~~.0 dBm ≤ RSSI < -74~~3~~.5 dBm RSSI_LEV _62: -74~~3~~.5 dBm ≤ RSSI < -74.0 dBm RSSI_LEV _63: -74.0 dBm ≤ RSSI

3GPP TSG RAN Meeting #7
Madrid, Spain, 13-15 March 2000

Document R1-00-0046
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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25.215 CR 029 Current Version: 3.1.0

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

For submission to: TSG-RAN #7
list expected approval meeting # here ↑

for approval	X	strategic		*(for SMG use only)*
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: (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG RAN WG1 **Date:** 1999-12-22

Subject: Re-definition of timing measurements

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: At the WG3#9 meeting the definition of CFN-SFN observed time difference and SFN-SFN observed time difference was changed. Therefore TS 25.215 needs to be updated accordingly.

Clauses affected:
5.1.11 CFN-SFN observed time difference
5.1.12 SFN-SFN observed time difference

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:

help.doc

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

5.1.11 ~~C~~SFN-~~S~~CFN observed time difference

Definition	The ~~C~~SFN-~~S~~CFN observed time difference to cell is defined as: OFF×38400+ T_m, where: T_m= ~~T_{RxSFN} –~~ (T_{UETx}-T_0) - T_{RxSFN}, given in chip units with the range [0, 1, …, 38399] chips T_{UETx} is the time when the UE transmits an uplink DPCCH/DPDCH frame. T_0 is defined in TS 25.211 section 7.1.3. T_{RxSFN} is the time at the beginning of the ~~next received~~ neighbouring P-CCPCH frame received most recent in time before~~after~~ the time instant T_{UETx}-T_0 in the UE. If the ~~next~~beginning of the neighbouring P-CCPCH frame is received exactly at T_{UETx}-T_0 then T_{RxSFN}=T_{UETx}-T_0 (which leads to T_m=0). and OFF=(SFN-CFN_{Tx}~~-SFN~~) mod 256, given in number of frames with the range [0, 1, …, 255] frames CFN_{Tx} is the connection frame number for the UE transmission of an uplink DPCCH/DPDCH frame at the time T_{UETx}. SFN ~~=~~ is the system frame number for the neighbouring P-CCPCH frame received in the UE at the time T_{RxSFN}. In case the inter-frequency measurement is done with compressed mode, the value for the parameter OFF is always reported to be 0. In case that the SFN measurement indicator indicates that the UE does not need to read cell SFN of the target neighbour cell, the value of the parameter OFF is always be set to 0. *Note: In Compressed mode it is not required to read cell SFN of the target neighbour cell.*
Applicable for	Connected Inter, Connected Intra
Range/mapping	Time difference is given with the resolution of one chip with the range [0, …, 9830399] chips.

5.1.12 SFN-SFN observed time difference

Definition	**Type 1:** The SFN-SFN observed time difference to cell is defined as: OFF×38400+ T_m, where: T_m= T_{RxSFNj} - T_{RxSFNi}, given in chip units with the range [0, 1, …, 38399] chips T_{RxSFNj} is the time at the beginning of a received neighbouring P-CCPCH frame from cell j. T_{RxSFNi} is time at the beginning of the ~~next received~~ neighbouring P-CCPCH frame from cell i received most recent in time before~~after~~ the time instant T_{RxSFNj} in the UE. If the next neighbouring P-CCPCH frame is received exactly at T_{RxSFNj} then T_{RxSFNj}= T_{RxSFNi} (which leads to T_m=0). and OFF=(SFN_j- SFN_i) mod 256, given in number of frames with the range [0, 1, …, 255] frames SFN_j ~~=~~ is the system frame number for downlink P-CCPCH frame from cell j in the UE at the time T_{RxSFNj}. SFN_i ~~=~~ is the system frame number for the P-CCPCH frame from cell i received in the UE at the time T_{RxSFNi}. **Type 2:** The relative timing difference between cell j and cell i, defined as $T_{CPICHRxj}$ - $T_{CPICHRxi}$, where: $T_{CPICHRxj}$ is the time when the UE receives one Primary CPICH slot from cell j $T_{CPICHRxi}$ is the time when the UE receives the Primary CPICH slot from cell i that is closest in time to the Primary CPICH slot received from cell j
Applicable for	**Type 1:** Idle, Connected Intra **Type 2:** Idle, Connected Intra, Connected Inter
Range/mapping	**Type 1:** Time difference is given with a resolution of one chip with the range [0, …, 9830399] chips. **Type 2:** Time difference is given with a resolution of 0.25 chip with the range [-1279.75, …, 1280] chips.

3GPP TSG RAN Meeting #7
Madrid, Spain, 13-15 March 2000

Document R1-00-0448
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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25.215 CR 030r2 Current Version: 3.1.0

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

For submission to: TSG-RAN #7	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: (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG RAN WG1 **Date:** 1999-03-

Subject: Mapping of timing measurements

Work item:

Category:				**Release:**	
	F	Correction	X	Phase 2	
	A	Corresponds to a correction in an earlier release		Release 96	
(only one category	B	Addition of feature		Release 97	
shall be marked	C	Functional modification of feature		Release 98	
with an X)	D	Editorial modification		Release 99	X
				Release 00	

Reason for change: For the timing measurements in TS 25.215 no detailed mapping of the range is given. This CR proposes detailed mapping to bits of the defined ranges for all timing related measurements in TS 25.215. For the round trip time measurement, the range of the mapping is reduced with 0.25 chip to fit into a 13 bit representation of the values.

Clauses affected: 5.1.11 CFN-SFN observed time difference, 5.1.12 SFN-SFN observed time difference, 5.1.13 UE Rx-Tx time difference, 5.1.14 Observed time difference to GSM cell, 5.2.7 Round trip time

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:

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

5.1.11 CFN-SFN observed time difference

Definition	The CFN-SFN observed time difference to cell is defined as: OFF×38400+ T_m, where: T_m= T_{RxSFN} - (T_{UETx}-T_0), given in chip units with the range [0, 1, …, 38399] chips T_{UETx} is the time when the UE transmits an uplink DPCCH/DPDCH frame. T_0 is defined in TS 25.211 section 7.1.3. T_{RxSFN} is time at the beginning of the next received neighbouring P-CCPCH frame after the time instant T_{UETx}-T_0in the UE. If the next neighbouring P-CCPCH frame is received exactly at T_{UETx}-T_0 then T_{RxSFN}=T_{UETx}-T_0 (which leads to T_m=0). and OFF=(CFN_{Tx}-SFN) mod 256, given in number of frames with the range [0, 1, …, 255] frames CFN_{Tx} is the connection frame number for the UE transmission of an uplink DPCCH/DPDCH frame at the time T_{UETx}. SFN = the system frame number for the neighbouring P-CCPCH frame received in the UE at the time T_{RxSFN}. In case the inter-frequency measurement is done with compressed mode, the value for the parameter OFF is always reported to be 0. In case that the SFN measurement indicator indicates that the UE does not need to read cell SFN of the target neighbour cell, the value of the parameter OFF is always be set to 0. *Note: In Compressed mode it is not required to read cell SFN of the target neighbour cell.*
Applicable for	Connected Inter, Connected Intra
Range/mapping	Time difference is given with the resolution of one chip with the range [0, …, 9830399] chips. Time difference shall be reported in the unit SFN-CFN_TIME where: SFN-CFN_TIME_0000000: 0 chip ≤ Time difference < 1 chip SFN-CFN_TIME_0000001: 1 chip ≤ Time difference < 2 chip SFN-CFN_TIME_0000002: 2 chip ≤ Time difference < 3 chip … SFN-CFN_TIME_9830397: 9830397 chip ≤ Time difference < 9830398 chip SFN-CFN_TIME_9830398: 9830398 chip ≤ Time difference < 9830399 chip SFN-CFN_TIME_9830399: 9830399 chip ≤ Time difference < 9830400 chip

5.1.12 SFN-SFN observed time difference

Definition	**Type 1:** The SFN-SFN observed time difference to cell is defined as: OFF×38400+ T_m, where: T_m= T_{RxSFNi} - T_{RxSFNj}, given in chip units with the range [0, 1, …, 38399] chips T_{RxSFNj} is the time at the beginning of a received neighbouring P-CCPCH frame from cell j. T_{RxSFNi} is time at the beginning of the next received neighbouring P-CCPCH frame from cell i after the time instant T_{RxSFNj} in the UE. If the next neighbouring P-CCPCH frame is received exactly at T_{RxSFNj} then T_{RxSFNj}= T_{RxSFNi} (which leads to T_m=0). and OFF=(SFN_j- SFN_i) mod 256, given in number of frames with the range [0, 1, …, 255] frames SFN_j = the system frame number for downlink P-CCPCH frame from cell j in the UE at the time T_{RxSFNj}. SFN_i = the system frame number for the P-CCPCH frame from cell i received in the UE at the time T_{RxSFNi}. **Type 2:** The relative timing difference between cell j and cell i, defined as $T_{CPICHRxj}$ - $T_{CPICHRxi}$, where: $T_{CPICHRxj}$ is the time when the UE receives one Primary CPICH slot from cell j $T_{CPICHRxi}$ is the time when the UE receives the Primary CPICH slot from cell i that is closest in time to the Primary CPICH slot received from cell j
Applicable for	**Type 1:** Idle, Connected Intra **Type 2:** Idle, Connected Intra, Connected Inter
Range/mapping	**Type 1:** Time difference is given with a resolution of one chip with the range [0, …, 9830399] chips. Time difference shall be reported in the unit T1_SFN-SFN_TIME where: T1_SFN-SFN_TIME_0000000: 0 chip ≤ Time difference < 1 chip T1_SFN-SFN_TIME_0000001: 1 chip ≤ Time difference < 2 chip T1_SFN-SFN_TIME_0000002: 2 chip ≤ Time difference < 3 chip … T1_SFN-SFN_TIME_9830397: 9830397 chip ≤ Time difference < 9830398 chip T1_SFN-SFN_TIME_9830398: 9830398 chip ≤ Time difference < 9830399 chip T1_SFN-SFN_TIME_9830399: 9830399 chip ≤ Time difference < 9830400 chip **Type 2:** Time difference is given with a resolution of 0.25 chip with the range [-1279.75, …, 1280] chips. Time difference shall be reported in the unit T2_SFN-SFN_TIME where: T2_SFN-SFN_TIME_00000: -1279.75 chip < Time difference ≤ -1279.50 chip T2_SFN-SFN_TIME_00001: -1279.50 chip < Time difference ≤ -1279.25 chip T2_SFN-SFN_TIME_00002: -1279.25 chip < Time difference ≤ -1279.00 chip … T2_SFN-SFN_TIME_10236: 1279.25 chip < Time difference ≤ 1279.50 chip T2_SFN-SFN_TIME_10237: 1279.50 chip < Time difference ≤ 1279.75 chip T2_SFN-SFN_TIME_10238: 1279.75 chip < Time difference ≤ 1280.00 chip

5.1.13 UE Rx-Tx time difference

Definition	The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first significant path, of the downlink DPCH frame from the measured radio link. Measurement shall be made for each cell included in the active set. Note: The definition of "first significant path" needs further elaboration.
Applicable for	Connected Intra
Range/mapping	The UE Rx-Tx time difference is given with the resolution of 0.25 chip with the range [876, …, 1172] chips. The UE Rx-Tx Time difference shall be reported in the unit RX-TX_TIME where: RX-TX_TIME_0000: UE Rx-Tx Time difference < 876.00 chip RX-TX_TIME_0001: 876.00 chip ≤ UE Rx-Tx Time difference < 876.25 chip RX-TX_TIME_0002: 876.25 chip ≤ UE Rx-Tx Time difference < 876.50 chip RX-TX_TIME_0003: 876.50 chip ≤ UE Rx-Tx Time difference < 876.75 chip … RX-TX_TIME_1182: 1171.25 chip ≤ UE Rx-Tx Time difference < 1171.50 chip RX-TX_TIME_1183: 1171.50 chip ≤ UE Rx-Tx Time difference < 1171.75 chip RX-TX_TIME_1184: 1171.75 chip ≤ UE Rx-Tx Time difference < 1172.00 chip RX-TX_TIME_1185: 1172.00 chip ≤ UE Rx-Tx Time difference

5.1.14 Observed time difference to GSM cell

Definition	The Observed time difference to GSM cell is defined as: T_{RxGSMj} - T_{RxSFNi}, where: T_{RxSFNi} is the time at the beginning of the P-CCPCH frame with SFN=0 from cell i. T_{RxGSMj} is the time at the beginning of the GSM BCCH 51-multiframe from GSM frequency j received closest in time after the time T_{RxSFNi}. If the next GSM multiframe is received exactly at T_{RxSFNi} then T_{RxGSMj} =T_{RxSFNi} (which leads to T_{RxGSMj} - T_{RxSFNi} = 0). The timing measurement shall reflect the timing situation when the most recent (in time) P-CCPCH with SFN=0 was received in the UE.
Applicable for	Idle, Connected Inter
Range/mapping	The Observed time difference to GSM cell is given with the resolution of 3060/(4096×*13) ms with the range [0, …, 3060/13-3060/(4096×*13)] ms. Observed time difference to GSM cell shall be reported in the unit GSM_TIME where: GSM_TIME_0000: 0 ms ≤ Observed time difference to GSM cell < 1×3060/(4096×13) ms GSM_TIME_0001: 1×3060/(4096×13) ms ≤ Observed time difference to GSM cell < 2×3060/(4096×13) ms GSM_TIME_0002: 2×3060/(4096×13) ms ≤ Observed time difference to GSM cell < 3×3060/(4096×13) ms ... GSM_TIME_4093: 4093×3060/(4096×13) ms ≤ Observed time difference to GSM cell < 4094×3060/(4096×13) ms GSM_TIME_4094: 4094×3060/(4096×13) ms ≤ Observed time difference to GSM cell < 4095×3060/(4096×13) ms GSM_TIME_4095: 4095×3060/(4096×13) ms ≤ Observed time difference to GSM cell < 3060/13 ms

5.1.15 UE GPS Timing of Cell Frames for LCS

Definition	The timing between cell j and GPS Time Of Week. $T_{UE-GPSj}$ is defined as the time of occurrence of a specified UTRAN event according to GPS time. The specified UTRAN event is the beginning of a particular frame (identified through its SFN) in the first significant multipath of the cell j CPICH, where cell j is a cell within the active set.
Applicable for	Connected Intra, Connected Inter
Range/mapping	The resolution of $T_{UE-GPSj}$ is 1µS. The range is from 0 to 6.04×10^{11} µS.

5.2 UTRAN measurement abilities

The structure of the table defining a UTRAN measurement quantity is shown below:

Column field	**Comment**
Definition	Contains the definition of the measurement.
Range/mapping	Gives the range and mapping to bits for the measurements quantity.

5.2.1 RSSI

Definition	Received Signal Strength Indicator, the wide-band received power within the UTRAN uplink carrier channel bandwidth in an UTRAN access point. The reference point for the RSSI measurements shall be the antenna connector.
Range/mapping	RSSI is given with a resolution of 0.5 dB with the range [-105, ..., -74] dBm. RSSI shall be reported in the unit RSSI_LEV where: RSSI_LEV _00: RSSI < –105.0 dBm RSSI_LEV _01: -105.0 dBm ≤ RSSI < –104.5 dBm RSSI_LEV _02: -104.5 dBm ≤ RSSI < –104.0 dBm ... RSSI_LEV _61: -73.0 dBm ≤ RSSI < -73.5 dBm RSSI_LEV _62: -73.5 dBm ≤ RSSI < -74.0 dBm RSSI_LEV _63: -74.0 dBm ≤ RSSI

5.2.2 SIR

Definition	Signal to Interference Ratio, is defined as: (RSCP/ISCP)×SF. Measurement shall be performed on the DPCCH after RL combination in Node B. The reference point for the SIR measurements shall be the antenna connector. where: RSCP = Received Signal Code Power, the received power on one code. ISCP = Interference Signal Code Power, the interference on the received signal. Only the non-orthogonal part of the interference is included in the measurement. SF=The spreading factor used on the DPCCH.
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 < –11.0 dB UTRAN_SIR_01: -11.0 dB ≤ SIR < –10.5 dB UTRAN_SIR_02: -10.5 dB ≤ SIR < –10.0 dB ... UTRAN_SIR_61: 19.0 dB ≤ SIR < 19.5 dB UTRAN_SIR_62: 19.5 dB ≤ SIR < 20.0 dB UTRAN_SIR_63: 20.0 dB ≤ SIR

5.2.3 Transmitted carrier power

Definition	Transmitted carrier power, is the total transmitted power on one carrier from one UTRAN access point. Measurement shall be possible on any carrier transmitted from the UTRAN access point. The reference point for the total transmitted power measurement shall be the antenna connector. In case of Tx diversity the total transmitted power for each branch shall be measured.
Range/mapping	Transmitted carrier power is given with a resolution of 0.5 dB with the range [0, ..., 50] dBm Transmitted carrier power shall be reported in the unit UTRAN_TX_POWER where: UTRAN_TX_POWER _016: 0.0 dBm ≤ Transmitted carrier power < 0.5 dBm UTRAN_TX_POWER _017: 0.5 dBm ≤ Transmitted carrier power < 1.0 dBm UTRAN_TX_POWER _018: 1.0 dBm ≤ Transmitted carrier power < 1.5 dBm ... UTRAN_TX_POWER _114 49.0 dBm ≤ Transmitted carrier power < 49.5 dBm UTRAN_TX_POWER _115: 49.5 dBm ≤ Transmitted carrier power < 50.0 dBm UTRAN_TX_POWER _116: 50.0 dBm ≤ Transmitted carrier power < 50.5 dBm

5.2.4 Transmitted code power

Definition	Transmitted code power, is the transmitted power on one channelisation code on one given scrambling code on one given carrier. Measurement shall be possible on any DPCH transmitted from the UTRAN access point and shall reflect the power on the pilot bits of the DPCH. The reference point for the transmitted code power measurement shall be the antenna connector. In case of Tx diversity the transmitted code power for each branch shall be measured.
Range/mapping	Transmitted code power is given with a resolution of 0.5 dB with the range [-10, ..., 46] dBm. Transmitted code power shall be reported in the unit UTRAN_CODE_POWER where: UTRAN_CODE_POWER _010: -10.0 dBm ≤ Transmitted code power < -9.5 dBm UTRAN_CODE_POWER _011: -9.5 dBm ≤ Transmitted code power < -9.0 dBm UTRAN_CODE_POWER _012: -9.0 dBm ≤ Transmitted code power < -8.5 dBm ... UTRAN_CODE_POWER _120 45.0 dBm ≤ Transmitted code power < 45.5 dBm UTRAN_CODE_POWER _121: 45.5 dBm ≤ Transmitted code power < 46.0 dBm UTRAN_CODE_POWER _122: 46.0 dBm ≤ Transmitted code power < 46.5 dBm

5.2.5 Transport channel BLER

Definition	Estimation of the transport channel block error rate (BLER). The BLER estimation shall be based on evaluating the CRC on each transport block. Measurement shall be possible to perform on any transport channel after RL combination in Node B. BLER estimation is only required for transport channels containing CRC.
Range/mapping	The Transport channel BLER shall be reported for 0 ≤ Transport channel BLER ≤ 1 in the unit BLER_dB where: BLER_dB_00: Transport channel BLER = 0 BLER_dB_01: -∞ < Log10(Transport channel BLER) < -4.03 BLER_dB_02: -4.03 ≤ Log10(Transport channel BLER) < -3.965 BLER_dB_03: -3.965 ≤ Log10(Transport channel BLER) < -3.9 ... BLER_dB_61: -0.195 ≤ Log10(Transport channel BLER) < -0.13 BLER_dB_62: -0.13 ≤ Log10(Transport channel BLER) < -0.065 BLER_dB_63: -0.065 ≤ Log10(Transport channel BLER) ≤ 0

5.2.6 Physical channel BER

Definition	Type 1: Measured on the DPDCH: The physical channel BER is an estimation of the average bit error rate (BER) before channel decoding of the DPDCH data after RL combination in Node B. Type 2: Measured on the DPCCH: The Physical channel BER is an estimation of the average bit error rate (BER) on the DPCCH after RL combination in Node B. It shall be possible to report a physical channel BER estimate of type 1 or of type 2 or of both types at the end of each TTI for the transferred TrCh's, e.g. for TrCh's with a TTI of x ms a x ms averaged physical channel BER shall be possible to report every x ms.
Range/mapping	The Physical channel BER shall be reported for 0 ≤ Physical channel BER ≤ 1 in the unit BER_dB where: BER_dB_00: Physical channel BER = 0 BER_dB_01: -∞ < Log10(Physical channel BER) < -4.03 BER_dB_02: -4.03 ≤ Log10(Physical channel BER) < -3.965 BER_dB_03: -3.965 ≤ Log10(Physical channel BER) < -3.9 ... BER_dB_61: -0.195 ≤ Log10(Physical channel BER) < -0.13 BER_dB_62: -0.13 ≤ Log10(Physical channel BER) < -0.065 BER_dB_63: -0.065 ≤ Log10(Physical channel BER) ≤ 0

5.2.7 Round trip time

NOTE: The relation between this measurement and the TOA measurement defined by WG2 needs clarification.

Definition	Round trip time (RTT), is defined as RTT = $T_{RX} – T_{TX}$, where T_{TX} = The time of transmission of the beginning of a downlink DPCH frame to a UE. T_{RX} = The time of reception of the beginning (the first significant path) of the corresponding uplink DPCCH/DPDCH frame from the UE. Note: The definition of "first significant path" needs further elaboration. Measurement shall be possible on DPCH for each RL transmitted from an UTRAN access point and DPDCH/DPCCH for each RL received in the same UTRAN access point.
Range/mapping	The Round trip time is given with the resolution of 0.25 chip with the range [876, …, 2923.50~~75~~] chips. The Round trip time shall be reported in the unit RT_TIME where: RT_TIME_0000: Round trip time < 876.00 chip RT_TIME_0001: 876.00 chip ≤ Round trip time < 876.25 chip RT_TIME_0002: 876.25 chip ≤ Round trip time < 876.50 chip RT_TIME_0003: 876.50 chip ≤ Round trip time < 876.75 chip … RT_TIME_8188: 2922.75 chip ≤ Round trip time < 2923.00 chip RT_TIME_8189: 2923.00 chip ≤ Round trip time < 2923.25 chip RT_TIME_8190: 2923.25 chip ≤ Round trip time < 2923.50 chip RT_TIME_8191: 2923.50 chip ≤ Round trip time

5.2.8 UTRAN GPS Timing of Cell Frames for LCS

Definition	The timing between cell j and GPS Time Of Week. $T_{UTRAN-GPSj}$ is defined as the time of occurrence of a specified UTRAN event according to GPS time. The specified UTRAN event is the beginning of a particular frame (identified through its SFN) in the first significant multipath of the cell j CPICH, where cell j is a cell within the active set.
Applicable for	Connected Intra, Connected Inter
Range/mapping	The resolution of $T_{UTRAN-GPSj}$ is 1µS. The range is from 0 to 6.04×10^{11} µS.

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Document R1-00-0048
e.g. for 3GPP use the format TP-99xxx
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25.215	**CR**	**031**	Current Version:	3.1.0

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

For submission to:	TSG-RAN #7	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:	TSG RAN WG1	**Date:**	1999-12-27
Subject:	Removal of note in Round trip time measurement		
Work item:			

Category:	F	Correction	X	**Release:**	Phase 2	
	A	Corresponds to a correction in an earlier release			Release 96	
(only one category	B	Addition of feature			Release 97	
shall be marked	C	Functional modification of feature			Release 98	
with an X)	D	Editorial modification			Release 99	X
					Release 00	

Reason for change:	In TS 25.215 section 5.2.7 Round trip time the following note can be found: Note: The relation between this measurement and the TOA measurement defined by WG2 needs clarification. As the Round trip time measurement now is accepted within WG2 and included in 25.302 v3.x.0 the note can be removed.
Clauses affected:	5.2.7 Round trip time

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:	

help.doc

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

5.2.7 Round trip time

~~NOTE: The relation between this measurement and the TOA measurement defined by WG2 needs clarification.~~

Definition	Round trip time (RTT), is defined as RTT = $T_{RX} – T_{TX}$, where T_{TX} = The time of transmission of the beginning of a downlink DPCH frame to a UE. T_{RX} = The time of reception of the beginning (the first significant path) of the corresponding uplink DPCCH/DPDCH frame from the UE. Note: The definition of "first significant path" needs further elaboration. Measurement shall be possible on DPCH for each RL transmitted from an UTRAN access point and DPDCH/DPCCH for each RL received in the same UTRAN access point.
Range/mapping	The Round trip time is given with the resolution of 0.25 chip with the range [876, …, 2923.75] chips.

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Document R1-00-0249
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25.215	**CR**	**033**	Current Version:	3.1.1

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

For submission to:	RAN # 7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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

Source: TSG RAN WG1 **Date:** 04-Jan-2000

Subject: Removal of fixed gap position in 25.215

Work item:

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

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

Release:

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

Reason for change: Fixed gap positions in compressed mode patterns are not needed as it can be expressed with flexible position parameters. UE complexity can be reduced by removing this option.

Clauses affected: 6.1.1.2

Other specs affected:

Other 3G core specifications	X	→ List of CRs:	25.212-037rev1
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:

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

6 Measurements for UTRA FDD

6.1 UE measurements

6.1.1 Compressed mode

6.1.1.1 Use of compressed mode/dual receiver for monitoring

A UE shall, on upper layers commands, monitor cells on other frequencies (FDD, TDD, GSM). To allow the UE to perform measurements, upper layers shall command that the UE enters in compressed mode, depending on the UE capabilities.

In case of compressed mode decision, UTRAN shall communicate to the UE the parameters of the compressed mode, described in reference [2], 25.212.

A UE with a single receiver shall support downlink compressed mode.

Every UE shall support uplink compressed mode, when monitoring frequencies which are close to the uplink transmission frequency (i.e. frequencies in the TDD or GSM 1800/1900 bands).

All fixed-duplex UE shall support both downlink and uplink compressed mode to allow inter-frequency handover within FDD and inter-mode handover from FDD to TDD.

> < WG1's note : the use of uplink compressed mode for single receiver UE when monitoring frequencies outside TDD and GSM 1800/1900 bands is for further study >

UE with dual receivers can perform independent measurements, with the use of a "monitoring branch" receiver, that can operate independently from the UTRA FDD receiver branch. Such UE do not need to support downlink compressed mode.

The UE shall support one single measurement purpose within one compressed mode transmission gap. The measurement purpose of the gap is signalled by upper layers.

The following section provides rules to parametrise the compressed mode.

6.1.1.2 Parameterisation of the compressed mode

In response to a request from upper layers, the UTRAN shall signal to the UE the compressed mode parameters.

The following parameters characterize a transmission gap :

- TGL: Transmission Gap Length is the duration of no transmission, expressed in number of slots.
- SFN: The system frame number when the transmission gap starts
- SN: The slot number when the transmission gap starts

With this definition, it is possible to have a flexible position of the transmission gap in the frame, as defined in [2].

The following parameters characterize a compressed mode pattern :

- TGP: Transmission Gap Period is the period of repetition of a set of consecutive frames containing up to 2 transmission gaps (*).
- TGL: As defined above
- TGD: Transmission Gap Distance is the duration of transmission between two consecutive transmission gaps within a transmission gap period, expressed in number of frames. In case there is only one transmission gap in the transmission gap period, this parameter shall be set to zero.
- PD: Pattern duration is the total time of all TGPs expressed in number of frames.

- SFN: The system frame number when the first transmission gap starts
- UL/DL compressed mode selection: This parameter specifies whether compressed mode is used in UL only, DL only or both UL and DL.
- Compressed mode method: The method for generating the downlink compressed mode gap can be puncturing, reducing the spreading factor or upper layer scheduling and is described in [2].
- ~~Transmit gap position mode: The gap position can be fixed or adjustable. This is defined in [2].~~
- Downlink frame type: This parameter defines if frame structure type 'A' or 'B' shall be used in downlink compressed mode. This is defined in [2].
- Scrambling code change: This parameter indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'. Alternative scrambling codes are described in [3].
- PCM: Power Control Mode specifies the uplink power control algorithm applied during recovery period after each transmission gap in compressed mode. PCM can take 2 values (0 or 1). The different power control modes are described in [4].
- PRM: Power Resume Mode selects the uplink power control method to calculate the initial transmit power after the gap. PRM can take two values (0 or 1) and is described in [4].

In a compressed mode pattern, the first transmission gap starts in the first frame of the pattern. The gaps have a fixed position in the frames, and start in the slot position defined in [2].

(*): Optionally, the set of parameters may contain 2 values TGP1 and TGP2, where TGP1 is used for the 1st and the consecutive odd gap periods and TGP2 is used for the even ones. Note if TGP1=TGP2 this is equivalent to using only one TGP value.

In all cases, upper layers has control of individual UE parameters. The repetition of any pattern can be stopped on upper layers command.

The UE shall support [8] simultaneous compressed mode patterns which can be used for different measurements. Upper layers will ensure that the compressed mode gaps do not overlap and are not scheduled within the same frame. Patterns causing an overlap or too long gaps will not be processed by the UE and interpreted as a faulty message.

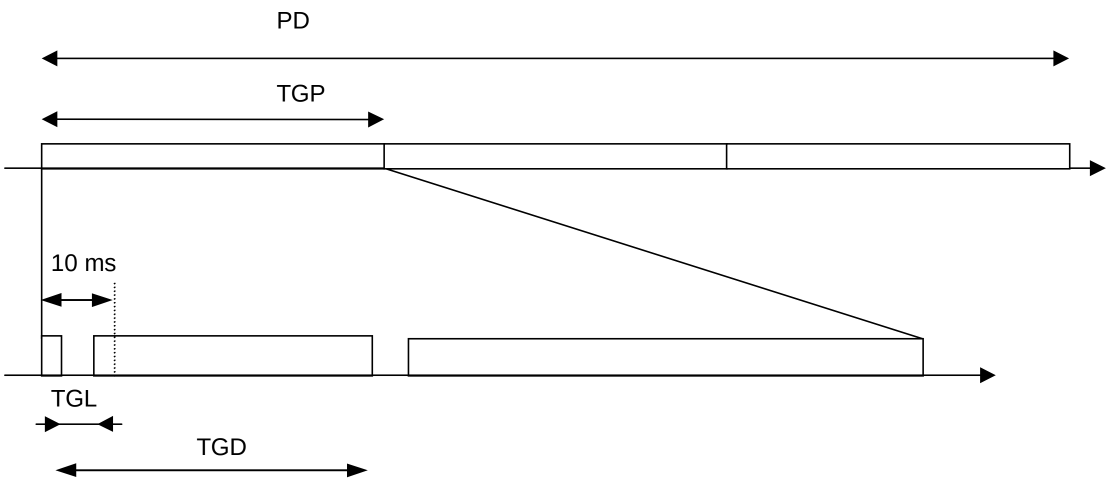

Figure 1 : illustration of compressed mode pattern parameters

6.1.1.3 Parameterisation limitations

In the table below the supported values for the TGL parameter is shown.

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Document R1-00-0342
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25.215	**CR**	**036rev4**	Current Version:	3.1.1

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

For submission to:	RAN # 7	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: (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG RAN WG1 **Date:** 09-Feb-2000

Subject: Corrections to 25.215 compressed mode parameter list

Work item:

Category:				**Release:**	
	F Correction	X		Phase 2	
	A Corresponds to a correction in an earlier release			Release 96	
(only one category	B Addition of feature			Release 97	
shall be marked	C Functional modification of feature			Release 98	
with an X)	D Editorial modification			Release 99	X
				Release 00	

Reason for change: Some parameters were missing, some were listed twice. Some parameters were not clarified to be integers. Inconsistancies were removed.

Clauses affected: 6.1.1.1, 6.1.1.2, 6.1.1.3

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: this CR includes the changes of CR 25.215-022 and CR 25.215-033

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

5.2.8 UTRAN GPS Timing of Cell Frames for LCS

Definition	The timing between cell j and GPS Time Of Week. $T_{UTRAN\text{-}GPSj}$ is defined as the time of occurrence of a specified UTRAN event according to GPS time. The specified UTRAN event is the beginning of a particular frame (identified through its SFN) in the first significant multipath of the cell j CPICH, where cell j is a cell within the active set.
Applicable for	Connected Intra, Connected Inter
Range/mapping	The resolution of $T_{UTRAN\text{-}GPSj}$ is 1μS. The range is from 0 to 6.04×10^{11} μS.

6 Measurements for UTRA FDD

6.1 UE measurements

6.1.1 Compressed mode

6.1.1.1 Use of compressed mode/dual receiver for monitoring

A UE shall, on ~~upp~~higher layers commands, monitor cells on other frequencies (FDD, TDD, GSM). To allow the UE to perform measurements, ~~upp~~higher layers shall command that the UE enters in compressed mode, depending on the UE capabilities.

In case of compressed mode decision, UTRAN shall communicate to the UE the parameters of the compressed mode~~, described in reference [2], 25.212~~.

A UE with a single receiver shall support downlink compressed mode.

Every UE shall support uplink compressed mode, when monitoring frequencies which are close to the uplink transmission frequency (i.e. frequencies in the TDD or GSM 1800/1900 bands).

All fixed-duplex UE shall support both downlink and uplink compressed mode to allow inter-frequency handover within FDD and inter-mode handover from FDD to TDD.

< WG1's note : the use of uplink compressed mode for single receiver UE when monitoring frequencies outside TDD and GSM 1800/1900 bands is for further study >

UE with dual receivers can perform independent measurements, with the use of a "monitoring branch" receiver, that can operate independently from the UTRA FDD receiver branch. Such UE do not need to support downlink compressed mode.

The UE shall support one single measurement purpose within one compressed mode transmission gap. The measurement purpose of the gap is signalled by ~~upp~~higher layers.

The following section provides rules to parametrise the compressed mode.

6.1.1.2 Parameterisation of the compressed mode

~~In response to a request from upper layers, the UTRAN shall signal to the UE the compressed mode parameters.~~

~~The following parameters characterize a transmission gap :~~

- ~~TGL: Transmission Gap Length is the duration of no transmission, expressed in number of slots.~~
- ~~SFN: The system frame number when the transmission gap starts~~
- ~~SN: The slot number when the transmission gap starts~~

With this definition, it is possible to have a flexible position of the transmission gap in the frame, as defined in [2].

The following parameters characterize a compressed mode pattern :

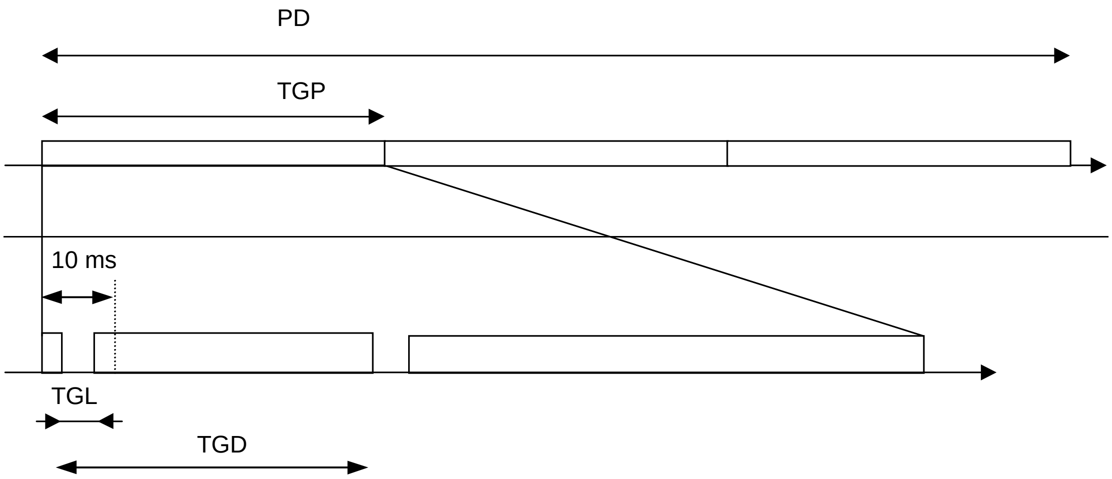
- TGP: Transmission Gap Period is the period of repetition of a set of consecutive frames containing up to 2 transmission gaps (*).
- TGL: As defined above
- TGD: Transmission Gap Distance is the duration of transmission between two consecutive transmission gaps within a transmission gap period, expressed in number of frames. In case there is only one transmission gap in the transmission gap period, this parameter shall be set to zero.
- PD: Pattern duration is the total time of all TGPs expressed in number of frames.
- SFN: The system frame number when the first transmission gap starts
- UL/DL compressed mode selection: This parameter specifies whether compressed mode is used in UL only, DL only or both UL and DL.
- Compressed mode method: The method for generating the downlink compressed mode gap can be puncturing, reducing the spreading factor or upper layer scheduling and is described in [2].
- Transmit gap position mode: The gap position can be fixed or adjustable. This is defined in [2].
- Downlink frame type: This parameter defines if frame structure type 'A' or 'B' shall be used in downlink compressed mode. This is defined in [2].
- Scrambling code change: This parameter indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'. Alternative scrambling codes are described in [3].
- PCM: Power Control Mode specifies the uplink power control algorithm applied during recovery period after each transmission gap in compressed mode. PCM can take 2 values (0 or 1). The different power control modes are described in [4].
- PRM: Power Resume Mode selects the uplink power control method to calculate the initial transmit power after the gap. PRM can take two values (0 or 1) and is described in [4].

In a compressed mode pattern, the first transmission gap starts in the first frame of the pattern. The gaps have a fixed position in the frames, and start in the slot position defined in [2].

(*): Optionally, the set of parameters may contain 2 values TGP1 and TGP2, where TGP1 is used for the 1st and the consecutive odd gap periods and TGP2 is used for the even ones. Note if TGP1=TGP2 this is equivalent to using only one TGP value.

In all cases, upper layers has control of individual UE parameters. The repetition of any pattern can be stopped on upper layers command.

The UE shall support [8] simultaneous compressed mode patterns which can be used for different measurements. Upper layers will ensure that the compressed mode gaps do not overlap and are not scheduled within the same frame. Patterns causing an overlap or too long gaps will not be processed by the UE and interpreted as a faulty message.



~~Figure 1 : illustration of compressed mode pattern parameters~~

In response to a request from higher layers, the UTRAN shall signal to the UE the compressed mode parameters.

A transmission gap pattern sequence consists of alternating transmission gap patterns 1 and 2, each of these patterns in turn consists of one or two transmission gaps. See figure 1.

The following parameters characterize a transmission gap pattern:

- TGSN (Transmission Gap Starting Slot Number): A transmission gap pattern begins in a radio frame, henceforward called first radio frame of the transmission gap pattern, containing at least one transmission gap slot. TGSN is the slot number of the first transmission gap slot within the first radio frame of the transmission gap pattern
- TGL1 (Transmission Gap Length 1): This is the duration of the first transmission gap within the transmission gap pattern, expressed in number of slots.
- TGL2 (Transmission Gap Length 2): This is the duration of the second transmission gap within the transmission gap pattern, expressed in number of slots. If this parameter is not explicitly set by higher layers, then TGL2 = TGL1.
- TGD (Transmission Gap start Distance): This is the duration between the starting slots of two consecutive transmission gaps within a transmission gap pattern, expressed in number of slots. The resulting position of the second transmission gap within its radio frame(s) shall comply with the limitations of [2]. If this parameter is not set by higher layers, then there is only one transmission gap in the transmission gap pattern.
- TGPL1 (Transmission Gap Pattern Length): This is the duration of transmission gap pattern 1.
- TGPL2 (Transmission Gap Pattern Length): This is the duration of transmission gap pattern 2. If this parameter is not explicitly set by higher layers, then TGPL2 = TGPL1.

The following parameters control the transmission gap pattern sequence start and repetition:

- TGPRC (Transmission Gap Pattern Repetition Count): This is the number of transmission gap patterns within the transmission gap pattern sequence.
- TGCFN (Transmission Gap Connection Frame Number): This is the CFN of the first radio frame of the first pattern 1 within the transmission gap pattern sequence.

In addition to the parameters defining the positions of transmission gaps, each transmission gap pattern sequence is characterized by:

- UL/DL compressed mode selection: This parameter specifies whether compressed mode is used in UL only, DL only or both UL and DL.
- UL compressed mode method: The methods for generating the uplink compressed mode gap are spreading factor division by two or higher layer scheduling and are described in [2].

- DL compressed mode method: The methods for generating the downlink compressed mode gap are puncturing, spreading factor division by two or higher layer scheduling and are described in [2].
- Downlink frame type: This parameter defines if frame structure type 'A' or 'B' shall be used in downlink compressed mode. The frame structures are defined in [2].
- Scrambling code change: This parameter indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'. Alternative scrambling codes are described in [3].
- RPP: Recovery Period Power control mode specifies the uplink power control algorithm applied during recovery period after each transmission gap in compressed mode. RPP can take 2 values (0 or 1). The different power control modes are described in [4].
- ITP: Initial Transmit Power mode selects the uplink power control method to calculate the initial transmit power after the gap. ITP can take two values (0 or 1) and is described in [4].

The UE shall support [8] simultaneous compressed mode pattern sequences which can be used for different measurements.

Higher layers will ensure that the compressed mode gaps do not overlap and are not scheduled to overlap the same frame. The behaviour when an overlap occurs is described in [TS 25.302].

In all cases, higher layers have control of individual UE parameters. Any pattern sequence can be stopped on higher layers' command.

The parameters TGSN, TGL1, TGL2, TGD, TGPL1, TGPL2, TGPRC and TGCFN shall all be integers.

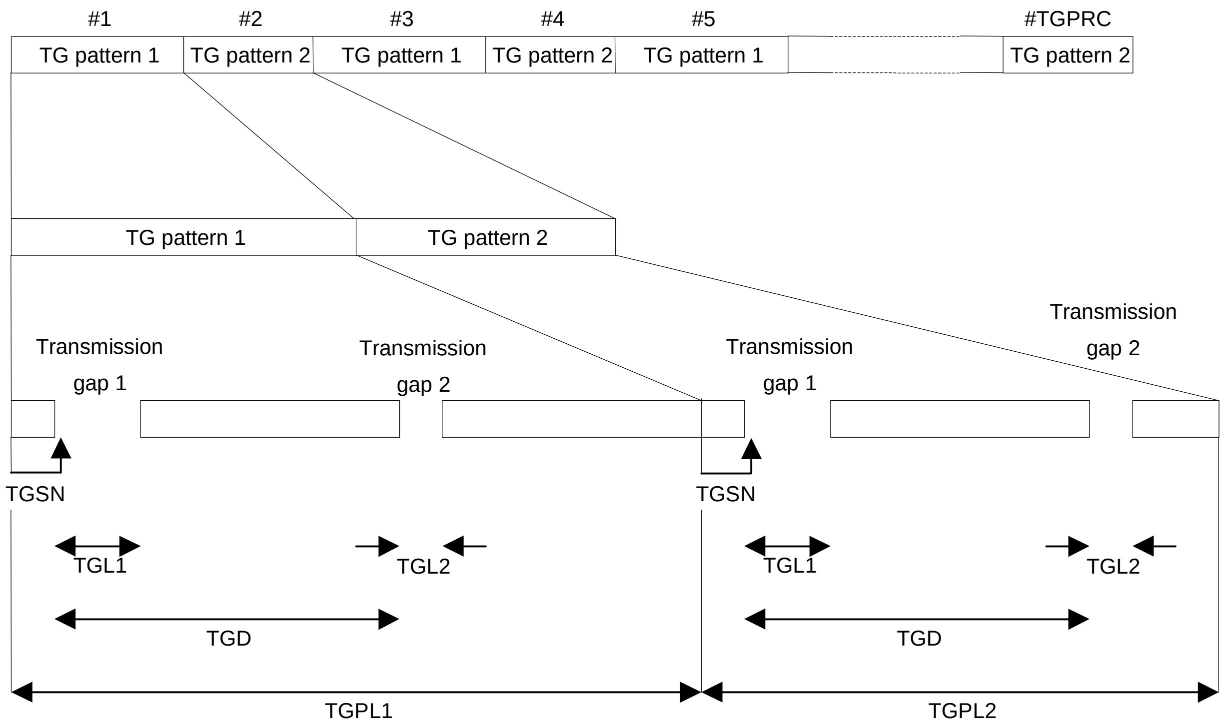


Figure 1: Illustration of compressed mode pattern parameters

6.1.1.3 Parameterisation limitations

In the table below the supported values for the TGL1 and TGL2 parameters ~~is~~ are shown.

Measurements performed on	Supported TGL1 values, when TGL2 is not set	Supported TGL1 and TGL2 values when both are set (TGL1, TGL2)
FDD inter-frequency cell	7, 14	(10, 5)
TDD cell	4	-
GSM cell	3, 4, 7, 10, 14	-

Multi-mode terminals shall support the union of all TGL1 and TGL2 values for the supported modes.

Further limitations on the transmission gap position iswithin its frame(s) are given in TS 25.212.

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Document R1-00-0438

e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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25.215	**CR**	**037r3**	Current Version:	V3.1.0

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

For submission to: TSG-RAN #7	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		UTRAN / Radio	X	Core Network	

Source: TSG RAN WG1 **Date:** Feb 14th, 2000

Subject: Definition and range of physical channel BER

Work item:

Category:				**Release:**	
	F	Correction	X	Phase 2	
	A	Corresponds to a correction in an earlier release		Release 96	
(only one category	B	Addition of feature		Release 97	
shall be marked	C	Functional modification of feature		Release 98	
with an X)	D	Editorial modification		Release 99	X
				Release 00	

Reason for change:

TS25.215v310 does not define uniquely at which point the physical channel BER of Type 1 measurement on the DPDCH is measured and how a physical channel BER estimate is supposed to calculate. The CR will clarify the definition of BER for UTRAN by setting the exact point for measurement and, as a consequence of the point, rename Type 1 BER the tranport channel BER, denoted by TrCH BER. Also the fact that the tranport channel BER is required to measure for TrCH's with channel coding only is pointed out.
Furthermore, the definition of Type 2 BER on DPCCH will be clarified. This is put into a separate section 5.2.7.

The number of bits for mapping of the physical channel BER and the transport channel BER is expanded to 8 bits, and the range of them is shortened because mapping described in 25.215 version 3.1.0 is too rough to achieve useful outer loop TPC performance.

Clauses affected: 5.2.6., 5.2.7.

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:

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

Range/mapping	Transmitted carrier power is given with a resolution of 0.5 dB with the range [0, ..., 50] dBm Transmitted carrier power shall be reported in the unit UTRAN_TX_POWER where: UTRAN_TX_POWER _016: 0.0 dBm ≤ Transmitted carrier power < 0.5 dBm UTRAN_TX_POWER _017: 0.5 dBm ≤ Transmitted carrier power < 1.0 dBm UTRAN_TX_POWER _018: 1.0 dBm ≤ Transmitted carrier power < 1.5 dBm ... UTRAN_TX_POWER _114: 49.0 dBm ≤ Transmitted carrier power < 49.5 dBm UTRAN_TX_POWER _115: 49.5 dBm ≤ Transmitted carrier power < 50.0 dBm UTRAN_TX_POWER _116: 50.0 dBm ≤ Transmitted carrier power < 50.5 dBm

5.2.4 Transmitted code power

Definition	Transmitted code power, is the transmitted power on one channelisation code on one given scrambling code on one given carrier. Measurement shall be possible on any DPCH transmitted from the UTRAN access point and shall reflect the power on the pilot bits of the DPCH. The reference point for the transmitted code power measurement shall be the antenna connector. In case of Tx diversity the transmitted code power for each branch shall be measured.
Range/mapping	Transmitted code power is given with a resolution of 0.5 dB with the range [-10, ..., 46] dBm. Transmitted code power shall be reported in the unit UTRAN_CODE_POWER where: UTRAN_CODE_POWER _010: -10.0 dBm ≤ Transmitted code power < -9.5 dBm UTRAN_CODE_POWER _011: -9.5 dBm ≤ Transmitted code power < -9.0 dBm UTRAN_CODE_POWER _012: -9.0 dBm ≤ Transmitted code power < -8.5 dBm ... UTRAN_CODE_POWER _120: 45.0 dBm ≤ Transmitted code power < 45.5 dBm UTRAN_CODE_POWER _121: 45.5 dBm ≤ Transmitted code power < 46.0 dBm UTRAN_CODE_POWER _122: 46.0 dBm ≤ Transmitted code power < 46.5 dBm

5.2.5 Transport channel BLER

Definition	Estimation of the transport channel block error rate (BLER). The BLER estimation shall be based on evaluating the CRC on each transport block. Measurement shall be possible to perform on any transport channel after RL combination in Node B. BLER estimation is only required for transport channels containing CRC.
Range/mapping	The Transport channel BLER shall be reported for 0 ≤ Transport channel BLER ≤ 1 in the unit BLER_dB where: BLER_dB_00: Transport channel BLER = 0 BLER_dB_01: -∞ < Log10(Transport channel BLER) < -4.03 BLER_dB_02: -4.03 ≤ Log10(Transport channel BLER) < -3.965 BLER_dB_03: -3.965 ≤ Log10(Transport channel BLER) < -3.9 ... BLER_dB_61: -0.195 ≤ Log10(Transport channel BLER) < -0.13 BLER_dB_62: -0.13 ≤ Log10(Transport channel BLER) < -0.065 BLER_dB_63: -0.065 ≤ Log10(Transport channel BLER) ≤ 0

5.2.6 TransportPhysical channel BER

Definition	~~Type 1:~~ ~~Measured on the DPDCH:~~ The ~~physical~~transport channel BER is an estimation of the average bit error rate (BER)) of RL-combined DPDCH data. The transport channel (TrCH) BER is measured from the data considering only non-punctured bits ~~before~~ at the input of the channel decoder~~ing of the DPDCH data after RL combination~~ in Node B. It shall be possible to report an estimate of the transport channel BER for a TrCH after the end of each TTI of the TrCH. The reported TrCH BER shall be an estimate of the BER during the latest TTI for that TrCH. Transport channel BER is only required to be reported for TrCHs that are channel coded. ~~Type 2:~~ ~~Measured on the DPCCH:~~ ~~The Physical channel BER is an estimation of the average bit error rate (BER) on the DPCCH after RL combination in Node B.~~ ~~It shall be possible to report a physical channel BER estimate of type 1 or of type 2 or of both types at the end of each TTI for the transferred TrCh's, e.g. for TrCh's with a TTI of x ms a x ms averaged physical channel BER shall be possible to report every x ms.~~
Range/mapping	The Transport~~Physical~~ channel BER shall be reported for 0 ≤ Transport~~Physical~~ channel BER ≤ 1 in the unit TrCh_BER_LOG~~dB~~ where: TrCh_BER_LOG~~dB~~_000: Transport~~Physical~~ channel BER = 0 TrCh_BER_LOG~~dB~~_001: -∞ < Log10(Transport~~Physical~~ channel BER) < -2.06375~~4.03~~ TrCh_BER_LOG~~dB~~_002: -2.06375~~4.03~~ ≤ Log10(Transport~~Physical~~ channel BER) < -2.055625~~3.965~~ TrCh_BER_LOG~~dB~~_003: -2.055625~~3.965~~ ≤ Log10(Transport~~Physical~~ channel BER) < -2.0475~~3.9~~ ... TrCh_BER_LOG~~dB~~_253~~61~~: -0.024375~~195~~ ≤ Log10(Transport~~Physical~~ channel BER) < -0.01625~~13~~ TrCh_BER_LOG~~dB~~_254~~62~~: -0.01625~~13~~ ≤ Log10(Transport~~Physical~~ channel BER) < -0.008125~~65~~ TrCh_BER_LOG~~dB~~_255~~63~~: -0.008125~~65~~ ≤ Log10(Transport~~Physical~~ channel BER) ≤ 0

5.2.7 Physical channel BER

Definition	The Physical channel BER is an estimation of the average bit error rate (BER) on the DPCCH after RL combination in Node B. An estimate of the Physical channel BER shall be possible to be reported after the end of each TTI of any of the transferred TrCHs. The reported physical channel BER shall be an estimate of the BER during the latest TTI.
Range/mapping	The physical channel BER shall be reported for 0 ≤ Physical channel BER ≤ 1 in the unit PhCh_BER_LOG where: PhCh_BER_LOG_000: Physical channel BER = 0 PhCh_BER_LOG_001: -∞ < Log10(Physical channel BER) < -2.06375 PhCh_BER_LOG_002: -2.06375≤ Log10(Physical channel BER) < -2.055625 PhCh_BER_LOG_003: -2.055625 ≤ Log10(Physical channel BER) < -2.0475 ... PhCh_BER_LOG_253: -0.024375 ≤ Log10(Physical channel BER) < -0.01625 PhCh_BER_LOG_254: -0.01625 ≤ Log10(Physical channel BER) < -0.008125 PhCh_BER_LOG_255: -0.008125 ≤ Log10(Physical channel BER) ≤ 0

5.2.8~~7~~ Round trip time

NOTE: The relation between this measurement and the TOA measurement defined by WG2 needs clarification.

Definition	Round trip time (RTT), is defined as RTT = $T_{RX} – T_{TX}$, where T_{TX} = The time of transmission of the beginning of a downlink DPCH frame to a UE. T_{RX} = The time of reception of the beginning (the first significant path) of the corresponding uplink DPCCH/DPDCH frame from the UE. Note: The definition of "first significant path" needs further elaboration. Measurement shall be possible on DPCH for each RL transmitted from an UTRAN access point and DPDCH/DPCCH for each RL received in the same UTRAN access point.
Range/mapping	The Round trip time is given with the resolution of 0.25 chip with the range [876, …, 2923.75] chips.

5.2.98 UTRAN GPS Timing of Cell Frames for LCS

Definition	The timing between cell j and GPS Time Of Week. $T_{UTRAN-GPSj}$ is defined as the time of occurrence of a specified UTRAN event according to GPS time. The specified UTRAN event is the beginning of a particular frame (identified through its SFN) in the first significant multipath of the cell j CPICH, where cell j is a cell within the active set.
Applicable for	Connected Intra, Connected Inter
Range/mapping	The resolution of $T_{UTRAN-GPSj}$ is 1µS. The range is from 0 to 6.04×10^{11} µS.

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Document R1-00-0309
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or for SMG, use the format P-99-xxx

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25.215 CR 040 Current Version: 3.1.0

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

For submission to:	TSG-RAN #7	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: (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG RAN WG1 **Date:** 2000-02-24

Subject: Clarification of CPICH measurements in Tx diversity

Work item:

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

F	Correction	X	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	

Release: Release 99

Reason for change: In TS 25.215 v.3.1.0 it is not clear how the RSCP and Ec/No shall be measured on the Primary CPICH in the case where Tx diversity is applied to the Primary CPICH. It is proposed that the power of the Primary CPICH from both antennas shall be taken into consideration when estimating the total received Primary CPICH power in the UE. The power of the Primary CPICH shall be separately measured from each antenna in the cell and summed together in [W] to a total received Primary CPICH power.

Clauses affected: 5.1.1 CPICH RSCP, 5.1.7 CPICH Ec/No

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:

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5.1.1 CPICH RSCP

Definition	Received Signal Code Power, the received power on one code measured on the pilot bits of the Primary CPICH. The reference point for the RSCP is the antenna connector at the UE. If Tx diversity is applied on the Primary CPICH the received code power from each antenna shall be separately measured and summed together in [W] to a total received code power on the Primary CPICH.
Applicable for	Idle, Connected Intra, Connected Inter
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 < –115 dBm CPICH_RSCP_LEV _01: -115 dBm ≤ CPICH RSCP < –114 dBm CPICH_RSCP_LEV _02: -114 dBm ≤ CPICH RSCP < –113 dBm ... CPICH_RSCP_LEV _89: -27 dBm ≤ CPICH RSCP < -26 dBm CPICH_RSCP_LEV _90: -26 dBm ≤ CPICH RSCP < -25 dBm CPICH_RSCP_LEV _91: -25 dBm ≤ CPICH RSCP

5.1.2 PCCPCH RSCP

Definition	Received Signal Code Power, the received power on one code measured on the PCCPCH from a TDD cell. The reference point for the RSCP is the antenna connector at the UE. Note: The RSCP can either be measured on the data part or the midamble of a burst, since there is no power difference between these two parts. However, in order to have a common reference, measurement on the midamble is assumed.
Applicable for	Idle, Connected Inter
Range/mapping	PCCPCH RSCP is given with a resolution of 1 dB with the range [-115, ..., -25] dBm. PCCPCH RSCP shall be reported in the unit PCCPCH _RSCP_LEV where: PCCPCH _RSCP_LEV _00: PCCPCH RSCP < –115 dBm PCCPCH _RSCP_LEV _01: -115 dBm ≤ PCCPCH RSCP < –114 dBm PCCPCH _RSCP_LEV _02: -114 dBm ≤ PCCPCH RSCP < –113 dBm ... PCCPCH _RSCP_LEV _89: -27 dBm ≤ PCCPCH RSCP < -26 dBm PCCPCH _RSCP_LEV _90: -26 dBm ≤ PCCPCH RSCP < -25 dBm PCCPCH _RSCP_LEV _91: -25 dBm ≤ PCCPCH RSCP

5.1.3 RSCP

Definition	Received Signal Code Power, the received power on one code measured on the pilot bits of the DPCCH after RL combination. The reference point for the RSCP is the antenna connector at the UE.
Applicable for	Connected Intra
Range/mapping	RSCP is given with a resolution of 1 dB with the range [-115, ..., -40] dBm. RSCP is given with a resolution of 1 dB with the range [-115, ..., -25] dBm. RSCP shall be reported in the unit RSCP_LEV where: RSCP_LEV _00: RSCP < –115 dBm RSCP_LEV _01: -115 dBm ≤ RSCP < –114 dBm RSCP_LEV _02: -114 dBm ≤ RSCP < –113 dBm ... RSCP_LEV _89: -27 dBm ≤ RSCP < -26 dBm RSCP_LEV _90: -26 dBm ≤ RSCP < -25 dBm RSCP_LEV _91: -25 dBm ≤ RSCP

5.1.4 SIR

Definition	Signal to Interference Ratio, defined as: (RSCP/ISCP)×(SF/2). The SIR shall be measured on DPCCH after RL combination. The reference point for the SIR is the antenna connector of the UE. where: RSCP = Received Signal Code Power, the received power on one code measured on the pilot bits. ISCP = Interference Signal Code Power, the interference on the received signal measured on the pilot bits. Only the non-orthogonal part of the interference is included in the measurement. SF=The spreading factor used.
Applicable for	Connected Intra
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 < –11.0 dB UE_SIR_01: -11.0 dB ≤ SIR < –10.5 dB UE_SIR_02: -10.5 dB ≤ SIR < –10.0 dB ... UE_SIR_61: 19.0 dB ≤ SIR < 19.5 dB UE_SIR_62: 19.5 dB ≤ SIR < 20.0 dB UE_SIR_63: 20.0 dB ≤ SIR

5.1.5 UTRA carrier RSSI

Definition	Received Signal Strength Indicator, the wide-band received power within the relevant channel bandwidth. Measurement shall be performed on a UTRAN downlink carrier. The reference point for the RSSI is the antenna connector at the UE.
Applicable for	Idle, Connected Intra, Connected Inter
Range/mapping	UTRA carrier RSSI is given with a resolution of 1 dB with the range [-94, ..., -32] dBm. UTRA carrier RSSI shall be reported in the unit UTRA_carrier_RSSI_LEV where: UTRA_carrier_RSSI_LEV _00: UTRA carrier RSSI < –94 dBm UTRA_carrier_RSSI_LEV _01: -94 dBm ≤ UTRA carrier RSSI < –93 dBm UTRA_carrier_RSSI_LEV _02: -93 dBm ≤ UTRA carrier RSSI < –92 dBm ... UTRA_carrier_RSSI_LEV _61: -32 dBm ≤ UTRA carrier RSSI < -33 dBm UTRA_carrier_RSSI_LEV _62: -33 dBm ≤ UTRA carrier RSSI < -32 dBm UTRA_carrier_RSSI_LEV _63: -32 dBm ≤ UTRA carrier RSSI

5.1.6 GSM carrier RSSI

Definition	Received Signal Strength Indicator, the wide-band received power within the relevant channel bandwidth. Measurement shall be performed on a GSM BCCH carrier. The reference point for the RSSI is the antenna connector at the UE.
Applicable for	Idle, Connected Inter
Range/mapping	According to the definition of RXLEV in GSM 05.08.

5.1.7 CPICH Ec/No

Definition	The received energy per chip divided by the power density in the band. The Ec/No is identical to RSCP/RSSI. Measurement shall be performed on the Primary CPICH. The reference point for Ec/No is the antenna connector at the UE. If Tx diversity is applied on the Primary CPICH the received energy per chip (Ec) from each antenna shall be separately measured and summed together in [Ws] to a total received chip energy per chip on the Primary CPICH, before calculating the Ec/No.
Applicable for	Idle, Connected Intra, Connected Inter

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 < –24 dB CPICH_Ec/No _01: -24 dB ≤ CPICH Ec/No < –23 dB CPICH_Ec/No _02: -23 dB ≤ CPICH Ec/No < –22 dB ... CPICH_Ec/No _23: -2 dB ≤ CPICH Ec/No < -1 dB CPICH_Ec/No _24: -1 dB ≤ CPICH Ec/No < 0 dB CPICH_Ec/No _25: 0 dB ≤ CPICH Ec/No

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Document ***R1-00-0322***

3G CHANGE REQUEST

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25.215 CR 042r1 Current Version: 3.1.1

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG RAN#7 for approval X for information
list TSG meeting no. here ↑ *(only one box should be marked with an X)*

Form: 3G CR cover sheet, version 1.0 The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf

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

Source: TSG RAN WG1 **Date:** 2.3.2000

Subject: UTRAN RSSI measurement

3G Work item:

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

F	Correction	X
A	Corresponds to a correction in a 2G specification	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Reason for change: To implement a decision made in TSG RAN Ad Hoc meeting on RRM.

Clauses affected: 5.2.1 RSSI

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G 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:

Column field	**Comment**
Definition	Contains the definition of the measurement.
Range/mapping	Gives the range and mapping to bits for the measurements quantity.

5.2.1 RSSI

Definition	Received Signal Strength Indicator, the wide-band received power within the UTRAN uplink carrier channel bandwidth in an UTRAN access point. The reference point for the RSSI measurements shall be the antenna connector.
Range/mapping	RSSI is given with a resolution of 0.1 ~~0.5~~ dB with the range [-112~~-105~~, ...,-50~~-74~~] dBm. RSSI shall be reported in the unit RSSI_LEV where: RSSI_LEV _000: RSSI < -112.0~~-105.0~~ dBm RSSI_LEV _001: -112.0~~-105.0~~ dBm ≤ RSSI < -111.9~~-104.5~~ dBm RSSI_LEV _002: -111.9~~-104.5~~ dBm ≤ RSSI < -111.8~~-104.0~~ dBm ... RSSI_LEV _619~~61~~: -50.2~~-73.0~~ dBm ≤ RSSI < -50.1~~-73.5~~ dBm RSSI_LEV _620~~62~~: -50.1~~-73.5~~ dBm ≤ RSSI < -50.0~~-74.0~~ dBm RSSI_LEV _621~~63~~: -50.0~~-74.0~~ dBm ≤ RSSI

5.2.2 SIR

Definition	Signal to Interference Ratio, is defined as: (RSCP/ISCP)×SF. Measurement shall be performed on the DPCCH after RL combination in Node B. The reference point for the SIR measurements shall be the antenna connector. where: RSCP = Received Signal Code Power, the received power on one code. ISCP = Interference Signal Code Power, the interference on the received signal. Only the non-orthogonal part of the interference is included in the measurement. SF=The spreading factor used on the DPCCH.
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 < –11.0 dB UTRAN_SIR_01: -11.0 dB ≤ SIR < –10.5 dB UTRAN_SIR_02: -10.5 dB ≤ SIR < –10.0 dB ... UTRAN_SIR_61: 19.0 dB ≤ SIR < 19.5 dB UTRAN_SIR_62: 19.5 dB ≤ SIR < 20.0 dB UTRAN_SIR_63: 20.0 dB ≤ SIR

5.2.3 Transmitted carrier power

Definition	Transmitted carrier power, is the total transmitted power on one carrier from one UTRAN access point. Measurement shall be possible on any carrier transmitted from the UTRAN access point. The reference point for the total transmitted power measurement shall be the antenna connector. In case of Tx diversity the total transmitted power for each branch shall be measured.

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Madrid, Spain, 13-15 March 2000

Document R1-00-0332

3G CHANGE REQUEST

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25.215 CR 043r1 Current Version: 3.1.1

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG RAN#7 for approval X for information
list TSG meeting no. here ↑ *(only one box should be marked with an X)*

Form: 3G CR cover sheet, version 1.0 The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf

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

Source: TSG RAN WG1 **Date:** 29.2.2000

Subject: UTRAN Propagation delay

3G Work item:

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

F	Correction	
A	Corresponds to a correction in a 2G specification	
B	Addition of feature	X
C	Functional modification of feature	
D	Editorial modification	

Reason for change: To implement a decision made in TSG RAN Ad Hoc meeting on RRM, this CR adds UTRAN Propagation delay measurement to 25.215. This measurement is already included in WG3 specifications.

Clauses affected: 5.2.9, new section added

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G 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:

5.2.6 Physical channel BER

Definition	Type 1: Measured on the DPDCH: The physical channel BER is an estimation of the average bit error rate (BER) before channel decoding of the DPDCH data after RL combination in Node B. Type 2: Measured on the DPCCH: The Physical channel BER is an estimation of the average bit error rate (BER) on the DPCCH after RL combination in Node B. It shall be possible to report a physical channel BER estimate of type 1 or of type 2 or of both types at the end of each TTI for the transferred TrCh's, e.g. for TrCh's with a TTI of x ms a x ms averaged physical channel BER shall be possible to report every x ms.
Range/mapping	The Physical channel BER shall be reported for 0 ≤ Physical channel BER ≤ 1 in the unit BER_dB where: BER_dB_00: Physical channel BER = 0 BER_dB_01: -∞ < Log10(Physical channel BER) < -4.03 BER_dB_02: -4.03 ≤ Log10(Physical channel BER) < -3.965 BER_dB_03: -3.965 ≤ Log10(Physical channel BER) < -3.9 ... BER_dB_61: -0.195 ≤ Log10(Physical channel BER) < -0.13 BER_dB_62: -0.13 ≤ Log10(Physical channel BER) < -0.065 BER_dB_63: -0.065 ≤ Log10(Physical channel BER) ≤ 0

5.2.7 Round trip time

NOTE: The relation between this measurement and the TOA measurement defined by WG2 needs clarification.

Definition	Round trip time (RTT), is defined as RTT = $T_{RX} – T_{TX}$, where T_{TX} = The time of transmission of the beginning of a downlink DPCH frame to a UE. T_{RX} = The time of reception of the beginning (the first significant path) of the corresponding uplink DPCCH/DPDCH frame from the UE. Note: The definition of "first significant path" needs further elaboration. Measurement shall be possible on DPCH for each RL transmitted from an UTRAN access point and DPDCH/DPCCH for each RL received in the same UTRAN access point.
Range/mapping	The Round trip time is given with the resolution of 0.25 chip with the range [876, …, 2923.75] chips.

5.2.8 UTRAN GPS Timing of Cell Frames for LCS

Definition	The timing between cell j and GPS Time Of Week. $T_{UTRAN-GPSj}$ is defined as the time of occurrence of a specified UTRAN event according to GPS time. The specified UTRAN event is the beginning of a particular frame (identified through its SFN) in the first significant multipath of the cell j CPICH, where cell j is a cell within the active set.
Applicable for	Connected Intra, Connected Inter
Range/mapping	The resolution of $T_{UTRAN-GPSj}$ is 1µS. The range is from 0 to 6.04×10^{11} µS.

5.2.9 Propagation delay

Definition	Propagation delay is defined as one-way propagation delay as measured during PRACH access: Propagation delay = (T_{RX} – T_{TX} – 2560)/2, where T_{TX} = The time of AICH access slot (n-2-AICH transmission timing), where 0≤(n-2-AICH Transmission Timing)≤14 and AICH_Transmission_Timing can have values 0 or 1. T_{RX} = The time of reception of the beginning (the first significant path) of the PRACH message from the UE at PRACH access slot n. Note: The definition of "first significant path" needs further elaboration.
Range/mapping	The Propagation delay is given with the resolution of 3 chips with the range [0, …, 765] chips. The Propagation delay shall be reported in the unit PROP_DELAY where: PROP_DELAY_000: 0 chip ≤ Propagation delay < 3 chip PROP_DELAY_001: 3 chip ≤ Propagation delay < 6 chip PROP_DELAY_002: 6 chip ≤ Propagation delay < 9 chip ... PROP_DELAY_252: 756 chip ≤ Propagation delay < 759 chip PROP_DELAY_253: 759 chip ≤ Propagation delay < 762 chip PROP_DELAY_254: 762 chip ≤ Propagation delay < 765 chip PROP_DELAY_255: 765 chip ≤ Propagation delay

CHANGE REQUEST

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25.215	**CR**	**044R2**	Current Version: V 3.1.1

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

For submission to:	RAN #7	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:	TSG RAN WG1	**Date:**	3 Mar 2000

Subject:	Correction to sections: 5.1.15 UE GPS Timing of Cell Frames for LCS; 5.2.8 UTRAN GPS Timing of Cell Frames for LCS, including timing mapping
Work item:	TS 25.215

Category:	F	Correction	X	**Release:**	Phase 2	
	A	Corresponds to a correction in an earlier release			Release 96	
(only one category	B	Addition of feature			Release 97	
shall be marked	C	Functional modification of feature			Release 98	
with an X)	D	Editorial modification			Release 99	X
					Release 00	

Reason for change:	Correction of UE/UTRAN measurement parameters to support assisted GPS LCS method to required accuracy. The requirement to measure these parameters has been defined by RAN WG2 in LS R299J47.
Clauses affected:	5.1.15; 5.2.8

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:	

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

5.1.13 UE Rx-Tx time difference

Definition	The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first significant path, of the downlink DPCH frame from the measured radio link. Measurement shall be made for each cell included in the active set. Note: The definition of "first significant path" needs further elaboration.
Applicable for	Connected Intra
Range/mapping	The UE Rx-Tx time difference is given with the resolution of 0.25 chip with the range [876, …, 1172] chips.

5.1.14 Observed time difference to GSM cell

Definition	The Observed time difference to GSM cell is defined as: T_{RxGSMj} - T_{RxSFNi}, where: T_{RxSFNi} is the time at the beginning of the P-CCPCH frame with SFN=0 from cell i. T_{RxGSMj} is the time at the beginning of the GSM BCCH 51-multiframe from GSM frequency j received closest in time after the time T_{RxSFNi}. If the next GSM multiframe is received exactly at T_{RxSFNi} then T_{RxGSMj} =T_{RxSFNi} (which leads to T_{RxGSMj} - T_{RxSFNi} = 0). The timing measurement shall reflect the timing situation when the most recent (in time) P-CCPCH with SFN=0 was received in the UE.
Applicable for	Idle, Connected Inter
Range/mapping	The Observed time difference to GSM cell is given with the resolution of 3060/(4096*13) ms with the range [0, …, 3060/13-3060/(4096*13)] ms.

5.1.15 UE GPS Timing of Cell Frames for LCS

Definition	The timing between cell j and GPS Time Of Week. $T_{UE-GPSj}$ is defined as the time of occurrence of a specified UTRAN event according to GPS time. The specified UTRAN event is the beginning of a particular frame (identified through its SFN) in the first significant multipath of the cell j CPICH, where cell j is a cell within the active set.
Applicable for	Connected Intra, Connected Inter
Range/mapping	The resolution of $T_{UE-GPSj}$ is 0.125 chips~~1μS~~. The range is from 0 to 2319360000000 chips~~6.04×10^11 μS~~. $T_{UE-GPSj}$ shall be reported in the unit GPS_TIME where: GPS_TIME_00000000000000: 0 chip ≤ $T_{UE-GPSj}$ < 0.125 chip GPS_TIME_00000000000001: 0.125 chip ≤ $T_{UE-GPSj}$ < 0.250 chip GPS_TIME_00000000000002: 0.250 chip ≤ $T_{UE-GPSj}$ < 0.375 chip … GPS_TIME_18554879999997: 2319359999999.625 chip ≤ $T_{UE-GPSj}$ < 2319359999999.750 chip GPS_TIME_18554879999998: 2319359999999.750 chip ≤ $T_{UE-GPSj}$ < 2319359999999.875 chip GPS_TIME_18554879999999: 2319359999999.875 chip ≤ $T_{UE-GPSj}$ < 2319360000000.000 chip

Definition	Type 1: Measured on the DPDCH: The physical channel BER is an estimation of the average bit error rate (BER) before channel decoding of the DPDCH data after RL combination in Node B. Type 2: Measured on the DPCCH: The Physical channel BER is an estimation of the average bit error rate (BER) on the DPCCH after RL combination in Node B. It shall be possible to report a physical channel BER estimate of type 1 or of type 2 or of both types at the end of each TTI for the transferred TrCh's, e.g. for TrCh's with a TTI of x ms a x ms averaged physical channel BER shall be possible to report every x ms.
Range/mapping	The Physical channel BER shall be reported for 0 ≤ Physical channel BER ≤ 1 in the unit BER_dB where: BER_dB_00: Physical channel BER = 0 BER_dB_01: -∞ < Log10(Physical channel BER) < -4.03 BER_dB_02: -4.03 ≤ Log10(Physical channel BER) < -3.965 BER_dB_03: -3.965 ≤ Log10(Physical channel BER) < -3.9 ... BER_dB_61: -0.195 ≤ Log10(Physical channel BER) < -0.13 BER_dB_62: -0.13 ≤ Log10(Physical channel BER) < -0.065 BER_dB_63: -0.065 ≤ Log10(Physical channel BER) ≤ 0

5.2.7 Round trip time

NOTE: The relation between this measurement and the TOA measurement defined by WG2 needs clarification.

Definition	Round trip time (RTT), is defined as RTT = $T_{RX} - T_{TX}$, where T_{TX} = The time of transmission of the beginning of a downlink DPCH frame to a UE. T_{RX} = The time of reception of the beginning (the first significant path) of the corresponding uplink DPCCH/DPDCH frame from the UE. Note: The definition of "first significant path" needs further elaboration. Measurement shall be possible on DPCH for each RL transmitted from an UTRAN access point and DPDCH/DPCCH for each RL received in the same UTRAN access point.
Range/mapping	The Round trip time is given with the resolution of 0.25 chip with the range [876, …, 2923.75] chips.

5.2.8 UTRAN GPS Timing of Cell Frames for LCS

Definition	The timing between cell j and GPS Time Of Week. $T_{UTRAN-GPSj}$ is defined as the time of occurrence of a specified UTRAN event according to GPS time. The specified UTRAN event is the beginning of a particular frame (identified through its SFN) in the first significant multipath of the cell j CPICH, where cell j is a cell within the active set.
Applicable for	Connected Intra, Connected Inter
Range/mapping	The resolution of $T_{UTRAN-GPSj}$ is 0.125 chips~~1µS~~. The range is from 0 to 2319360000000 chips~~6.04×10^11 µS~~. $T_{UTRAN-GPSj}$ shall be reported in the unit GPS_TIME where: GPS_TIME_00000000000000: 0 chip ≤ $T_{UTRAN-GPSj}$ < 0.125 chip GPS_TIME_00000000000001: 0.125 chip ≤ $T_{UTRAN-GPSj}$ < 0.250 chip GPS_TIME_00000000000002: 0.250 chip ≤ $T_{UTRAN-GPSj}$ < 0.375 chip ... GPS_TIME_18554879999997: 2319359999999.625 chip ≤ $T_{UTRAN-GPSj}$ < 2319359999999.750 chip GPS_TIME_18554879999998: 2319359999999.750 chip ≤ $T_{UTRAN-GPSj}$ < 2319359999999.875 chip GPS_TIME_18554879999999: 2319359999999.875 chip ≤ $T_{UTRAN-GPSj}$ < 2319360000000.000 chip

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Madrid, Spain, 13-15 March 2000

3G CHANGE REQUEST

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25.215 CR 047 Current Version: 3.1.1

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG RAN#7 for approval X for information *(only one box should be marked with an X)*
list TSG meeting no. here ↑

Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

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

Source:	TSG RAN WG1	**Date:**	29.2.2000
Subject:	Removal of RSCP measurement		
3G Work item:			

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

F	Correction	X
A	Corresponds to a correction in a 2G specification	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Reason for change: To implement a decision made in TSG RAN Ad Hoc meeting on RRM, this CR deletes UE RSCP measurement to 25.215. The measurement is thus included only in SIR measurement.

Clauses affected: 5.1.3 RSCP measurement

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G 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:

Column field	**Comment**
Definition	Contains the definition of the measurement.
Applicable for	States if a measurement shall be possible to perform in Idle mode and/or Connected mode. For connected mode also information of the possibility to perform the measurement on intra-frequency and/or inter-frequency are given. The following terms are used in the tables: Idle = Shall be possible to perform in idle mode Connected Intra = Shall be possible to perform in connected mode on an intra-frequency Connected Inter = Shall be possible to perform in connected mode on an inter-frequency
Range/mapping	Gives the range and mapping to bits for the measurements quantity.

5.1.1 CPICH RSCP

Definition	Received Signal Code Power, the received power on one code measured on the pilot bits of the Primary CPICH. The reference point for the RSCP is the antenna connector at the UE.
Applicable for	Idle, Connected Intra, Connected Inter
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 < –115 dBm CPICH_RSCP_LEV _01: -115 dBm ≤ CPICH RSCP < –114 dBm CPICH_RSCP_LEV _02: -114 dBm ≤ CPICH RSCP < –113 dBm ... CPICH_RSCP_LEV _89: -27 dBm ≤ CPICH RSCP < -26 dBm CPICH_RSCP_LEV _90: -26 dBm ≤ CPICH RSCP < -25 dBm CPICH_RSCP_LEV _91: -25 dBm ≤ CPICH RSCP

5.1.2 PCCPCH RSCP

Definition	Received Signal Code Power, the received power on one code measured on the PCCPCH from a TDD cell. The reference point for the RSCP is the antenna connector at the UE. Note: The RSCP can either be measured on the data part or the midamble of a burst, since there is no power difference between these two parts. However, in order to have a common reference, measurement on the midamble is assumed.
Applicable for	Idle, Connected Inter
Range/mapping	PCCPCH RSCP is given with a resolution of 1 dB with the range [-115, ..., -25] dBm. PCCPCH RSCP shall be reported in the unit PCCPCH _RSCP_LEV where: PCCPCH _RSCP_LEV _00: PCCPCH RSCP < –115 dBm PCCPCH _RSCP_LEV _01: -115 dBm ≤ PCCPCH RSCP < –114 dBm PCCPCH _RSCP_LEV _02: -114 dBm ≤ PCCPCH RSCP < –113 dBm ... PCCPCH _RSCP_LEV _89: -27 dBm ≤ PCCPCH RSCP < -26 dBm PCCPCH _RSCP_LEV _90: -26 dBm ≤ PCCPCH RSCP < -25 dBm PCCPCH _RSCP_LEV _91: -25 dBm ≤ PCCPCH RSCP

~~5.1.3 RSCP~~

~~Definition~~	~~Received Signal Code Power, the received power on one code measured on the pilot bits of the DPCCH after RL combination. The reference point for the RSCP is the antenna connector at the UE.~~
~~**Applicable for**~~	~~Connected Intra~~

~~**Range/mapping**~~	~~RSCP is given with a resolution of 1 dB with the range [-115, ..., -40] dBm. RSCP is given with a resolution of 1 dB with the range [-115, ..., -25] dBm. RSCP shall be reported in the unit RSCP_LEV where:~~ ~~RSCP_LEV _00: RSCP < –115 dBm~~ ~~RSCP_LEV _01: -115 dBm ≤ RSCP < –114 dBm~~ ~~RSCP_LEV _02: -114 dBm ≤ RSCP < –113 dBm~~ ~~...~~ ~~RSCP_LEV _89: -27 dBm ≤ RSCP < -26 dBm~~ ~~RSCP_LEV _90: -26 dBm ≤ RSCP < -25 dBm~~ ~~RSCP_LEV _91: -25 dBm ≤ RSCP~~

~~5.1.4~~ 5.1.3 SIR

Definition	Signal to Interference Ratio, defined as: (RSCP/ISCP)×(SF/2). The SIR shall be measured on DPCCH after RL combination. The reference point for the SIR is the antenna connector of the UE. where: RSCP = Received Signal Code Power, the received power on one code measured on the pilot bits. ISCP = Interference Signal Code Power, the interference on the received signal measured on the pilot bits. Only the non-orthogonal part of the interference is included in the measurement. SF=The spreading factor used.
Applicable for	Connected Intra
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 < –11.0 dB UE_SIR_01: -11.0 dB ≤ SIR < –10.5 dB UE_SIR_02: -10.5 dB ≤ SIR < –10.0 dB ... UE_SIR_61: 19.0 dB ≤ SIR < 19.5 dB UE_SIR_62: 19.5 dB ≤ SIR < 20.0 dB UE_SIR_63: 20.0 dB ≤ SIR

~~5.1.5~~ 5.1.4 UTRA carrier RSSI

Definition	Received Signal Strength Indicator, the wide-band received power within the relevant channel bandwidth. Measurement shall be performed on a UTRAN downlink carrier. The reference point for the RSSI is the antenna connector at the UE.
Applicable for	Idle, Connected Intra, Connected Inter
Range/mapping	UTRA carrier RSSI is given with a resolution of 1 dB with the range [-94, ..., -32] dBm. UTRA carrier RSSI shall be reported in the unit UTRA_carrier_RSSI_LEV where: UTRA_carrier_RSSI_LEV _00: UTRA carrier RSSI < –94 dBm UTRA_carrier_RSSI_LEV _01: -94 dBm ≤ UTRA carrier RSSI < –93 dBm UTRA_carrier_RSSI_LEV _02: -93 dBm ≤ UTRA carrier RSSI < –92 dBm ... UTRA_carrier_RSSI_LEV _61: -32 dBm ≤ UTRA carrier RSSI < -33 dBm UTRA_carrier_RSSI_LEV _62: -33 dBm ≤ UTRA carrier RSSI < -32 dBm UTRA_carrier_RSSI_LEV _63: -32 dBm ≤ UTRA carrier RSSI