TSG-RAN Meeting #9
Hawaii, U.S.A. , 20-22 September 2000

RP-000343

Title: **Agreed CRs to TS 25.215**

Source: **TSG-RAN WG1**

Agenda item: **5.1.3**

No.	R1 T-doc	Spec	CR	Rev	Subject	Cat	Current	New
1	R1-000899	25.215	067	-	Insertion of UTRAN SIRerror measurement in 25.215	F	3.3.0	3.4.0
2	R1-000900	25.215	068	-	Reporting of UTRAN Transmitted carrier power	F	3.3.0	3.4.0
3	R1-001028	25.215	070	-	Clarification of UTRAN SIR measurement	F	3.3.0	3.4.0
4	R1-001049	25.215	071	-	Clarification of first significant path	F	3.3.0	3.4.0
5	R1-001052	25.215	072	-	Clarification of radio link set as the measured object	F	3.3.0	3.4.0

CHANGE REQUEST

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25.215 CR **067**   Current Version: 3.3.0

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

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

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:**   2000-06-14

Subject: Insertion of UTRAN SIR_{error} measurement in 25.215

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 LS R3-00-1878, WG3 asks WG1 to include the UTRAN SIR_{error} measurement in their specifications. Together with the inclusion a clarification of the definition of the measurement is also requested. This CR includes the SIR_{error} measurement in 25.215.

Clauses affected: 5.2

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

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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. In compressed mode the SIR shall not be measured in the transmission gap. 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.

5.2.3 SIR$_{error}$

Definition	$SIR_{error} = SIR - SIR_{target\_ave}$, where: SIR = the SIR measured by UTRAN, defined in section 5.2, given in dB. SIR_{target_ave} = the SIR_{target} averaged over the same time period as the SIR used in the SIR_{error} calculation. The averaging of SIR_{target} shall be made in a linear scale and SIR_{target_ave} shall be given in dB.

5.2.43 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 transmitted carrier power measurement shall be the antenna connector. In case of Tx diversity the transmitted carrier power for each branch shall be measured.

5.2.54 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 the DPCCH-field of any dedicated radio link transmitted from the UTRAN access point and shall reflect the power on the pilot bits of the DPCCH-field. When measuring the transmitted code power in compressed mode all slots shall be included in the measurement, e.g. also the slots in the transmission gap shall be included in the measurement. 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 and summed together in [W].

5.2.65 Transport channel BER

Definition	The 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 at the input of the channel decoder 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.

5.2.76 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 averaged over the latest TTI of the respective TrCH.

5.2.87 Round trip time

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.

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

5.2.109 PRACH/PCPCH Propagation delay

Definition	Propagation delay is defined as one-way propagation delay as measured during either PRACH or PCPCH access: PRACH : Propagation delay = $(T_{RX} - T_{TX} - 2560)/2$, where: T_{TX} = The transmission time of AICH access slot (n-2-AICH transmission timing), where $0 \leq$(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. PCPCH: Propagation delay = $(T_{RX} - T_{TX} - (L_{pc-preamble} +1)*2560 - (k-1)*38400)/2$, where T_{TX} = The transmission time of CD-ICH at access slot (n-2-T_{cpch}), where $0 \leq$(n-2-T_{cpch})≤ 14 and T_{cpch} can have values 0 or 1. T_{RX} = The time of reception of the first chip (the first significant path) of the kth frame of the PCPCH message from the UE, where $k \in \{1, 2,..., N\_Max\_frames\}$. N_max_frames is a higher layer parameter and defines the maximum length of the PCPCH message. The PCPCH message begins at uplink access slot (n+$L_{pc-preamble}$/2), where $0 \leq$(n + $L_{pc-preamble}$ /2)≤ 14 and where $L_{pc-preamble}$ can have values 0 or 8. Note: The definition of "first significant path" needs further elaboration.

5.2.110 Acknowledged PRACH preambles

Definition	The Acknowledged PRACH preambles measurement is defined as the total number of acknowledged PRACH preambles per access frame per PRACH. This is equivalent to the number of positive acquisition indicators transmitted per access frame per AICH.

5.2.12~~1~~ Detected PCPCH access preambles

Definition	The detected PCPCH access preambles measurement is defined as the total number of detected access preambles per access frame on the PCPCHs belonging to a CPCH set.

5.2.13~~2~~ Acknowledged PCPCH access preambles

Definition	The Acknowledged PCPCH access preambles measurement is defined as the total number of acknowledged PCPCH access preambles per access frame on the PCPCHs belonging to a SF. This is equivalent to the number of positive acquisition indicators transmitted for a SF per access frame per AP-AICH.

CHANGE REQUEST

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25.215	CR	068	Current Version:	3.3.0

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

For submission to: **TSG-RAN #9**

list expected approval meeting # here ↑

for approval	**X**		strategic		*(for SMG*
for information			non-strategic		*use only)*

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:** 2000-07-03

Subject: Reporting of UTRAN Transmitted carrier power

Work item:

Category: F Correction   **X**   **Release:**

(only one category shall be marked with an 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 25.215 the measurement of the transmitted carrier power is defined to be measured per branch, e.g. in case of Tx diversity 2 values will be measured, otherwise one value will be measured. Currently only one value is reported over NBAP. This CR clarifies the reporting of Transmitted carrier power in Tx diversity.

Clauses affected: 5.2.3

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:

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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 transmitted carrier power measurement shall be the antenna connector. In case of Tx diversity the transmitted carrier power for each branch shall be measured and the maximum of the two values shall be reported to higher layers, i.e. only one value will be reported to higher layers.

CHANGE REQUEST

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25.215	**CR**	**070**		Current Version:	**3.3.0**

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

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

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:**	2000-08-08

Subject:	Clarification of UTRAN SIR measurement

Work item:	

Category: F   Correction   **X**   **Release:**

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

Reason for change:	There are two corrections needed to be made for SIR measurement definition.
	1) It should be defined that SIR measurement is unbiased.
	2) The definition that interference measurement should include only non-orthogonal part of the interference, should be deleted.

Clauses affected:	5.2.2

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:	

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.

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.

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. In compressed mode the SIR shall not be measured in the transmission gap. The reference point for the SIR measurements shall be the antenna connector.
	where:
	RSCP = Received Signal Code Power, <u>unbiased measurement of</u> 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.

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 transmitted carrier power measurement shall be the antenna connector. In case of Tx diversity the transmitted carrier power for each branch shall be measured.

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 the DPCCH-field of any dedicated radio link transmitted from the UTRAN access point and shall reflect the power on the pilot bits of the DPCCH-field. When measuring the transmitted code power in compressed mode all slots shall be included in the measurement, e.g. also the slots in the transmission gap shall be included in the measurement. 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 and summed together in [W].

CHANGE REQUEST

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25.215	CR	**071**		Current Version:	**3.3.0**

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

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

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:**	2000-08-14

Subject:	Clarification of first significant path

Work item:	

Category: F   Correction

(only one category shall be marked with an X)

				Release:	
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	

Reason for change:	In 25.215 the term "first significant path" is used in the definition of several timing measurements, both for the UE and UTRAN. Together with the term there is also a note saying that: "The definition of "first significant path" needs further elaboration". The same term is also used in 25.211, defining the UE uplink/downlink timing. This CR clarifies the definition of "first significant path" so that the note can be removed from the R-99 specification.

Clauses affected:	5.1.11, 5.1.13, 5.2.7, 5.2.8, 5.2.9

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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5.1.11 UE Rx-Tx time difference

Definition	The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first ~~significant~~ detected path (in time), 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

5.1.12 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

5.1.13 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 detected path (in time) ~~significant multipath~~ of the cell j CPICH, where cell j is a cell within the active set.
Applicable for	Connected Intra, Connected Inter

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.

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.

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. In compressed mode the SIR shall not be measured in the transmission gap. 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.

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 transmitted carrier power measurement shall be the antenna connector. In case of Tx diversity the transmitted carrier power for each branch shall be measured.

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 the DPCCH-field of any dedicated radio link transmitted from the UTRAN access point and shall reflect the power on the pilot bits of the DPCCH-field. When measuring the transmitted code power in compressed mode all slots shall be included in the measurement, e.g. also the slots in the transmission gap shall be included in the measurement. 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 and summed together in [W].

5.2.5   Transport channel BER

Definition	The 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 at the input of the channel decoder 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.

5.2.6   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 averaged over the latest TTI of the respective TrCH.

5.2.7 Round trip time

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 detectedsignificant path, in time) 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.

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 detectedsignificant multipath (in time) of the cell j CPICH, where cell j is a cell within the active set.
Applicable for	Connected Intra, Connected Inter

5.2.9 PRACH/PCPCH Propagation delay

Definition	Propagation delay is defined as one-way propagation delay as measured during either PRACH or PCPCH access: PRACH : Propagation delay = $(T_{RX} - T_{TX} - 2560)/2$, where: T_{TX} = The transmission 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 detectedsignificant path, in time) of the PRACH message from the UE at PRACH access slot n. Note: The definition of "first significant path" needs further elaboration. PCPCH: Propagation delay = $(T_{RX} - T_{TX} - (L_{pc-preamble} +1)*2560 - (k-1)*38400)/2$, where T_{TX} = The transmission time of CD-ICH at access slot (n-2-T_{cpch}), where 0≤(n-2-T_{cpch})≤14 and T_{cpch} can have values 0 or 1. T_{RX} = The time of reception of the first chip (the first detectedsignificant path, in time) of the kth frame of the PCPCH message from the UE, where k ∈ {1, 2,…, N_Max_frames}. N_max_frames is a higher layer parameter and defines the maximum length of the PCPCH message. The PCPCH message begins at uplink access slot (n+$L_{pc-preamble}$/2), where 0≤(n + $L_{pc-preamble}$ /2)≤14 and where $L_{pc-preamble}$ can have values 0 or 8. Note: The definition of "first significant path" needs further elaboration.

CHANGE REQUEST

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25.215	CR	072	Current Version:	3.3.0

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

For submission to: **TSG-RAN #9**
list expected approval meeting # here ↑

for approval **X**
for information ☐

strategic ☐
non-strategic ☐

(for SMG use only)

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:**	2000-08-14

Subject:	Clarification of radio link set as the measured object

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:	For the UTRAN measurements in 25.215 the term "after radio link combination in Node B" is used to indicate the measured object in Node B. However WG3 recently introduced a term called "Radio Link Set" in their specifications, i.e. in 25.401 v3.3.0, which has the same meaning. This CR introduces the term "Radio Link Set" for UTRAN measurements in 25.215.

Clauses affected:	2, 5.2.2, 5.2.5, 5.2.6

Other specs affected:

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

Other comments:	

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2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies.

[1]   3G TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

[2]   3G TS 25.212: "Multiplexing and channel coding (FDD)".

[3]   3G TS 25.213: "Spreading and modulation (FDD)".

[4]   3G TS 25.214: "Physical layer procedures (FDD)".

[5]   3G TS 25.215: "Physical layer - Measurements (FDD)".

[6]   3G TS 25.221: "Physical channels and mapping of transport channels onto physical channels (TDD)".

[7]   3G TS 25.222: "Multiplexing and channel coding (TDD)".

[8]   3G TS 25.223: "Spreading and modulation (TDD)".

[9]   3G TS 25.224: "Physical layer procedures (TDD)".

[10]   3G TS 25.301: "Radio Interface Protocol Architecture".

[11]   3G TS 25.302: "Services provided by the Physical layer".

[12]   3G TS 25.303: "UE functions and interlayer procedures in connected mode".

[13]   3G TS 25.304: "UE procedures in idle mode".

[14]   3G TS 25.331: "RRC Protocol Specification".

[15]   3G TR 25.922: "Radio Resource Management Strategies".

[16]   3G TR 25.923: "Report on Location Services (LCS)".

[17]   3G TR 25.401: "UTRAN Overall Description".

5.2.2   SIR

Definition	Signal to Interference Ratio, is defined as: (RSCP/ISCP)×SF. Measurement shall be performed on the DPCCH ~~of a Radio Link Setafter RL combination in Node B~~. In compressed mode the SIR shall not be measured in the transmission gap. 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.

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 transmitted carrier power measurement shall be the antenna connector. In case of Tx diversity the transmitted carrier power for each branch shall be measured.

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 the DPCCH-field of any dedicated radio link transmitted from the UTRAN access point and shall reflect the power on the pilot bits of the DPCCH-field. When measuring the transmitted code power in compressed mode all slots shall be included in the measurement, e.g. also the slots in the transmission gap shall be included in the measurement. 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 and summed together in [W].

5.2.5   Transport channel BER

Definition	The transport channel BER is an estimation of the average bit error rate (BER)~~) of RL combined~~ the DPDCH data _of a Radio Link Set_. The transport channel (TrCH) BER is measured from the data considering only non-punctured bits at the input of the channel decoder 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.

5.2.6   Physical channel BER

Definition	The Physical channel BER is an estimation of the average bit error rate (BER) on the DPCCH _of a Radio Link Setafter 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 averaged over the latest TTI of the respective TrCH.