3GPP TSG RAN WG1 Meeting #16
Pusan, Korea, October 10 – 13, 2000

Document R1-00-1211
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.215	CR	076	Current Version:	3.4.0

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

For submission to:	TSG-RAN #10	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: Ericsson **Date:** 2000-10-04

Subject: Clarification of GPS 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: Currently the measurement reference point for the UE and UTRAN GPS Timing of Cell Frames for LCS measurements are unclear. It is proposed to set the measurement reference point to the antenna connector. Also in the definition of the measurement UTRAN GPS Timing of Cell Frames for LCS a reference is made to a reception time instant even that the measurement shall measure the transmission time instant. These issues are clarified in this CR.

Clauses affected:

Other specs affected:

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

Other comments:


help.doc

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

5.1.13 UE GPS Timing of Cell Frames for LCS

Definition	The timing between cell j and GPS Time Of Week. $T_{UE\text{-}GPSj}$ 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 detected path (in time) of the cell j CPICH, where cell j is a cell within the active set. The reference point for $T_{UE\text{-}GPSj}$ shall be the antenna connector of the UE.
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 of a Radio Link Set. 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, unbiased measurement of the received power on one code. ISCP = Interference Signal Code Power, the interference on the received signal. 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.

5.2.4 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.

5.2.5 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].

5.2.6 Transport channel BER

Definition	The transport channel BER is an estimation of the average bit error rate (BER) of 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.

5.2.7 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 Set. 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.

5.2.8 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 detected path, in time) of the corresponding uplink DPCCH/DPDCH frame from the UE. 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.

5.2.9 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 the occurrence of a specified UTRAN event according to GPS T~~t~~ime Of Week. The specified UTRAN event is the beginning of the transmission of a particular frame in cell j (identified through its SFN). The reference point for $T_{UTRAN-GPSj}$ shall be the antenna connector. ~~in the first detected path (in time) of the cell j CPICH, where cell j is a cell within the active set.~~
Applicable for	Connected Intra, Connected Inter