TSG RAN WG1 San Diego, USA, 29 Feb – 3 Mar, 2000

Source: Lucent Technologies, Ericsson

Title: CR 25.215-044R2: Correction to UE/UTRAN GPS timing of cell frames for LCS

Document for: Approval

1. Introduction

This is a revision 2 of CR 25.215 - 044.

Following discussion, CR 25.215 - 044Rev2 is presented here for approval.

2. References

[1] Tdoc R1-00-0110: "CR 25.215-030R1"; RAN WG1 #10; 18 Jan – 21 Jan 2000.

[2] Tdoc R1-00-0324: "CR 25.215-044"; RAN WG1 #11; 29 Feb – 3 Mar 2000.

3GPP/SMG Meeting WG1#11 San Diego, USA, 29 Feb - 3 Mar 2000

Document R1-00-0447 e.g. for 3GPP use the format TP-99xxx or for SMG, use the format P-99-xxx

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Source: Lucent	Technologies, Ericsso	on		Date:	3 Mar 2000	
	tion to sections: 5.1.19 iming of Cell Frames				CS; 5.2.8 UTR	AN
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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_{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 1μ S. The range is from 0 to 2319360000000 chips 6.04×10^{14} μ S. $T_{UE-GPSj}$ shall be reported in the unit GPS TIME where: GPS TIME $000000000000000000000000000000000000$

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: $-0.065 \le \text{Log10}(\text{Physical channel BER}) \le 0$
	DEN_UD_03. =0.003 \section Log fo(Fffysical Glaffille) BEN \section 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 $T_{UTRAN-GPS_j}$ is 0.125 chips 1μ S. The range is from 0 to 2319360000000 chips 6.04×10^{11} μ S. $T_{UTRAN-GPS_j}$ shall be reported in the unit GPS_TIME where:
	$ \begin{array}{ll} \hline \text{GPS TIME } 000000000000000: 0 \text{ chip} \leq T_{\text{UTRAN-GPS}_{i}} < 0.125 \text{ chip} \\ \hline \text{GPS TIME } 000000000000001: 0.125 \text{ chip} \leq T_{\text{UTRAN-GPS}_{i}} < 0.250 \text{ chip} \\ \hline \text{GPS TIME } 000000000000002: 0.250 \text{ chip} \leq T_{\text{UTRAN-GPS}_{i}} < 0.375 \text{ chip} \\ \hline \end{array} $
	GPS_TIME_18554879999997: 2319359999999.625 chip ≤ $T_{UTRAN-GPS_i}$ < 2319359999999.750 chip GPS_TIME_18554879999998: 2319359999999.750 chip ≤ $T_{UTRAN-GPS_i}$ < 2319359999999.875 chip GPS_TIME_18554879999999: 2319359999999.875 chip ≤ $T_{UTRAN-GPS_i}$ < 2319360000000.000 chip