TSG-RAN Working Group 1 meeting #11
San Diego, USA
February 29th - March 3rd , 2000

TSGR1#11(00)0309

Agenda item: AH 16

Source: Ericsson

Title: CR 25.215-040: Clarification of CPICH measurements in Tx diversity

Document for: Decision

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. This CR clarifies this for the CPICH RSCP and CPICH Ec/No measurements.

3GPP TSG RAN WG1 Meeting #11
San Diego, USA, February 29th - March 3rd , 2000

Document ???00???
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	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: *(at least one should be marked with an X)*	(U)SIM		ME	X	UTRAN / Radio	X	Core Network	

Source:	Ericsson		**Date:**	2000-02-24	
Subject:	Clarification of CPICH measurements in Tx diversity				
Work item:					

Category: *(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 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:

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. 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