

TSG-RAN Working Group 1, meeting #16
Pusan, Korea, 10th – 13th October 2000

TSGR1#16(00)1290

Source: TSG RAN WG1
To: TSG RAN WG4
CC: TSG RAN WG2, TSG RAN WG3
Title: Answer to LS on UTRAN RSSI

Contact Person: Dirk Gerstenberger (Dirk.Gerstenberger@era.ericsson.se)

RAN WG1 thanks RAN WG4 for their LS in R4-00-0743, related to the definition of UTRAN RSSI. Based on the discussions during their 16th meeting, RAN WG1 came to the following conclusions.

In the by RAN4 proposed definition the term BS is used to represent the base station. The term BS is not referred to in the RAN WG1 specifications. RAN WG1 decided to modify the definition slightly to avoid that term according to the following:

The wide-band received power including the internally in the BS receiver generated noise, within the UTRAN uplink carrier channel bandwidth in an UTRAN access point. In case of BS with receiver diversity the reported value shall be the linear average of the power in the diversity branches.

RAN WG1 believes that the wide-band received power should be measured in the UTRAN uplink channel bandwidth, and not in the UTRAN carrier uplink channel bandwidth. RAN WG1 would like RAN WG4 to confirm that this is the correct interpretation.

Further, RAN WG1 would like to ask RAN WG4 if this change of name and definition would also apply to the UTRAN carrier RSSI measurement for the UE.

Finally, RAN WG1 would like RAN WG4 to verify that the use of the term linear average is correct in case of receiver diversity.

As can be seen from the definition proposed by RAN WG4, the reference point for the measurement would be removed. RAN WG1 has identified at least three implications with having no reference point for the measurement:

1. It is not possible to set an absolute accuracy requirement and therefore it can not be guaranteed that different Node B reports similar values in a similar condition, as the measurement may be implemented using different reference points.
2. It is not possible to define a measurement range over which both the absolute and relative measurement accuracy requirement shall be applicable for, as the measurement range is based on an absolute measurement and the absolute measurement value is not clearly defined without a common understanding of the reference point.
3. Without a reference point (external) the measurement accuracy can not be verified.

RAN WG1 prefers to keep the reference point as currently defined in TS 25.215 and TS 25.225 for the UTRAN RSSI measurement and has adopted the other changes indicated by RAN WG4 in the RAN WG1 specifications. The agreed CR for TS 25.215 (R1-00-1251) is attached to the LS.

Agenda item: AH 99
Source: Ericsson
Title: CR 25.215-075r1: Definition of UTRAN RSSI
Document for: Decision

Introduction

In LS TSG R4-00 0743, UTRAN RSSI, a new name and definition of the UTRAN RSSI measurement is proposed by RAN WG4.

The proposed new name is: *received total wide band power* and the new definition is:

The wide-band received power including the internally in the BS generated noise, within the UTRAN uplink carrier channel bandwidth in an UTRAN access point. In case of BS with receiver diversity the reported value shall be the linear average of the power in the diversity branches.

In the by RAN4 proposed definition the term BS is used to represent the base station. It is proposed to modify the definition slightly to avoid that term according to the following:

The wide-band received power including the internally in the BS receiver generated noise, within the UTRAN uplink carrier channel bandwidth in an UTRAN access point. In case of BS with receiver diversity the reported value shall be the linear average of the power in the diversity branches.

As can be seen from the proposed definition the reference point for the measurement has been removed. At least three implications with having no reference point for the measurement can be identified:

1. It is not possible to set an absolute accuracy requirement and therefore it can not be guaranteed that different Node B reports similar values in a similar condition as the measurement may be implemented using different reference points.
2. It is not possible to define a measurement range over which both the absolute and relative measurement accuracy requirement shall be applicable for, as the measurement range is based on a absolute measurement and the absolute measurement value is not clearly defined without a common understanding of the reference point.
3. Without a reference point (external) the measurement accuracy can not be verified.

It is therefore proposed to keep the reference point as currently defined in 25.215 for the UTRAN RSSI measurement and adopt the other changes indicated by RAN4.

During WG1#16, it was also suggested to change the name UTRAN uplink carrier channel bandwidth to UTRAN uplink channel bandwidth.

Proposal

The attached CR for 25.215 contains the above proposed changes.

<h2 style="margin: 0;">CHANGE REQUEST</h2>		<i>Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.</i>
25.215	CR	075r1
GSM (AA.BB) or 3G (AA.BBB) specification number ?		? CR number as allocated by MCC support team
For submission to: TSG-RAN #10 <small>list expected approval meeting # here ?</small>		Current Version: 3.4.0
for approval <input checked="" type="checkbox"/> for information <input type="checkbox"/>		strategic <input type="checkbox"/> non-strategic <input type="checkbox"/> <small>(for SMG use only)</small>

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-Formv2.doc>

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

Source: Ericsson **Date:** 2000-10-11

Subject: Definition of UTRAN RSSI

Work item: _____

Category:	F Correction <input checked="" type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input type="checkbox"/> D Editorial modification <input type="checkbox"/>	Release:	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
------------------	--	-----------------	--

(only one category shall be marked with an X)

Reason for change: In LS TSG R4-00 0743, UTRAN RSSI, a new name and definition of the UTRAN RSSI measurement is proposed by RAN WG4. This CR incorporates this new definition in 25.215 together with a clarification of the measurement reference point.

Clauses affected: 5.2.1

Other specs affected:	Other 3G core specifications <input type="checkbox"/> ? Other GSM core specifications <input type="checkbox"/> ? MS test specifications <input type="checkbox"/> ? BSS test specifications <input type="checkbox"/> ? O&M specifications <input type="checkbox"/> ?	List of CRs: _____ List of CRs: _____ List of CRs: _____ List of CRs: _____ List of CRs: _____
------------------------------	---	--

Other comments: _____



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

5.2.1 Received total wide band power~~RSSI~~

Definition	<p>The received wide band power including the in the receiver generated noise, within the UTRAN uplink channel bandwidth in an UTRAN access point. In case of receiver diversity the reported value shall be the linear average of the power in the diversity branches. 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 <u>Received total wide band power</u>RSSI measurements shall be the antenna connector.</p>
-------------------	---