3GPP TSG RAN Meeting #22 **RP-030633**
Maui, Hawaii, US, 9 - 12 December 2003

3GPP TSG-RAN WG3 Meeting #39 **R3-031756**
San Diego, CA, USA, 17th – 21th November 2003

Title:	Reply LS on RAN Work Item "'Control of Remote Electrical Tilting Antenna" and possible impact on TSG SA 5'
Response to:	LS Reply to 'RAN Work Item "Control of Remote Electrical Tilting Antenna" and possible impact on TSG SA 5' from SA5 (R3-031463, S5-038681)
Release:	Rel-6
Work Item:	**Remote Control of Electrical Tilting Antennas**
Source:	TSG RAN WG 3
To:	TSG SA WG 5
Cc:	TSG RAN, TSG SA, TSG SA2

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1. Overall Description:

TSG RAN WG3 would like to thank TSG SA WG 5 for the reply LS on 'RAN Work Item "Control of Remote Electrical Tilting Antenna" and possible impact on SA5'. This LS provides some further information requested by TSG SA WG 5 in order to complete their study.

1) Under what situations are RET adjustments necessary?

   It is the current TSG RAN WG 3 understanding that RET adjustments will be necessary for the following scenarios:

   a. Implementation of a new network plan with e.g. 4 RET adjustments per year
   b. Optimisation of the network depending on the interference situation with e.g. 4 RET adjustments per month
   c. Potentially optimisation of the network depending on the traffic situation with daily RET adjustments irrespective of the signalling scheme.

2) What needs to be measured and transferred over Itf-N in order to determine whether RET adjustments are needed?

   Potential parameters to be measured and transferred over Itf-N in uplink direction are:

   a. Uplink traffic per cell
   b. Downlink traffic per cell
   c. Uplink interference per cell
   d. Node B power per cell

   Furthermore, parameters for the configuration management and fault management of RET antennas like tilt values and alarms should be transferred over Itf-N in uplink and downlink direction.

3) The question whether the Remote Electrical Tilting Control is an integrated subsystem in the Node B was discussed by TSG RAN WG3 during RAN3#38. According to this discussion it is the current TSG RAN WG 3 understanding that there are two possible solutions to include the RET control into the UTRAN architecture: RET control as an integrated subsystem in the Node B or as a new UTRAN element. The former one is

already captured in the study area of TR 25.802 v0.2.0 as one possible solution. The discussion on this question is still ongoing and no final agreement was made until now.
However, it might be helpful for the discussion in TSG RAN WG 3 to know how much work is needed in TSG SA WG 5 resulting from the architectural impacts in case of a new UTRAN element for RET control.

4) The order of magnitude of the number of control parameters and signalling commands that would be required for the management of RET over Itf-N could not be provided by TSG RAN WG 3 at the moment. The command set for control of RET antennas which is given in section 8 of version 1.0 of the AISG1 standard worked out by the Antenna Interface Standards Group and released end of October 2003 can be seen as an example of the nature of the commands to be signalled over the Itf-N (see http://www.aisg.org.uk for AISG1).
It is the current TSG RAN WG 3 understanding that for a network wide control of RET antennas at least a command for RET Set Tilt has to be signalled over the Itf-N. Commands like RET Calibration and RET Get Tilt are other possibilities. Furthermore, some of the commands for Configuration and Fault Management (e.g. GetErrorStatus, GetInfo, ClearAlarms and GetDeviceData) might be signalled over the Itf-N, too.
TSG SA WG 5 is kindly asked to have a look at section 8 of the AISG1 standard as an example for the commands to be signalled over the Itf-N to get a first idea of the order of magnitude of the number of control parameters and signalling commands needed for RET control. Further information on this question will be provided later by TSG RAN WG 3.

5) All of the aspects listed by TSG SA WG 5 in their LS, i.e. Configuration Management (CM), Fault Management (FM) and Performance Management (PM), are crucial for TSG RAN WG 3. However, regarding the priority concerning the management of RET over Itf-N it is the TSG RAN WG 3 understanding that the priority of the CM is the highest one, followed by the FM with a middle priority and the PM with the lowest priority of the three listed aspects.

TSG RAN WG 3 will provide more input to TSG SA WG 5 on this topic as soon as they are available as outcome of the discussions, e.g. a more complete version of the TR 25.802 after major updates.

2. Actions:

To SA5 group:

ACTION: RAN3 kindly asks SA5 to

- ✍✍ take the provided information into account for their further study on RET control
- ✍✍ consider how much work is needed in TSG SA WG 5 resulting from the architectural impacts in case of a new UTRAN element for RET control and provide information about the needed work back to TSG RAN WG 3
- ✍✍ have a look at section 8 of the AISG1 standard as an example for commands to be signalled over Itf-N to get a first idea of the order of magnitude of the number of control parameters and signalling commands needed for RET control and possibly provide their view back to TSG RAN WG 3

3. Date of Next TSG RAN WG 3 Meetings:

TSG RAN WG 3 Meeting #40	12 – 16 January 2004, Sophia Antipolis, France
TSG RAN WG 3 Meeting #41	16 – 20 February 2004, Malaga, Spain