

**Agenda Item:** 15.1

**Source:** Rapporteur (Ericsson)

**Title:** Study Item Report: DL Power Control

**Document for:** Study Item Report

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## **1. Introduction**

This contribution reports on the E-mail discussion on "DL Power Control". The study item reached a conclusion. Main companies involved in the discussion were Ericsson, NTT DoCoMo and Nokia.

## **2. Scope**

The scope of the study item was:

- To discuss the possibilities to have different DL Power Reference information elements in different cells.
- To define the usage of the "DL Power Control" procedures on Iub and Iur, and their relation to the other RNSAP/NBAP procedures.
- To define the information elements in various procedures in RNSAP and NBAP.

## **3. Conclusion**

The study item concluded the following:

1. The SRNC is in control of the complete radio connection and determines the DL power levels, which (ideally) should be used in the different RL's.
2. E.g. due to specific load conditions in DRNC, the DRNS might have to modify level indicated by the SRNC temporarily (e.g. due to overload). This is also the main reason for including the option of having the DRNC setting the initial DL power level.
3. The DL Power Reference information element should be included in the DL Power Control message and is not needed in other NBAP/RNSAP messages, assuming that the DL Power Control procedure can be initiated in any instant of time.
4. Based on information concerning the cell-type, e.g. transmitted p-CCPCH power level received as part of neighbouring information, the SRNC will provide reference values for the DL power level of the different RL's. Based on the information the SRNC has, these levels may be different for the different RL's. Therefore the DL-power-ref procedure should include a IE group with RL-id and DL-power-ref value.

5. Information elements in various messages:

	Iur Setup	Iur Add	Iur Recon-figuration	Iub Setup	Iub Add	Iub Recon-figuration
Initial DL TX Pwr	C1	C1	-	M	O	-
PCCPCH Ec/Io	C2	C2	-	-	-	-
DPCH DL Eb/Io	C2	C2	-	-	-	-
Max DL Pwr	-	-	-	M	O	O
Min DL Pwr	-	-	-	M	O	O
DL Reference Pw	-	-	-	-	-	-

*Note: C1 and C2 are conditional. Either C1 or C2 marked information elements should be used at a time.*

## 4. Proposal

Based on the conclusion above, we propose the following updates to both 25.423 and 25.433:

1. The affected messages are updated according to the table in section 3.
2. The DL Power Control message is changed to:

Information element	Reference	Type
Message Type		M
Transaction Id		M
Length		M
Message Compatibility Information		M
DL Reference Power		C1
<b>DL Reference Power Information</b>		<b>C2</b>
RL Id		M
DL Reference Power		M

*Note: Either C1 or C2 can be present in the same message.*

3. The sentence

*If no RL id is provided in the message, the DL Reference Power value applies to all radio links.*

is added to the procedure descriptions in 25.423 and 25.433.