Agenda Item: 15.3

Source: Nokia

Title: RRM parameters in RNSAP RL Setup/RL Addition/RL Reconfiguration procedures.

Document for: Approval

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1   Introduction

This paper presents some clarification about RRM parameters in RNSAP protocol. Those parameter are mainly related to admission control and power control functionality and their functional split across Iur interface.

2   RRM parameters in RNAP

2.1   Available bit rate (UL/DL)

In case the setup or addition of a radio link in the DRNS fails for UL or DL load reason (exceeding power/interference budget or run out of DL Channelisation codes or time slots), the DRNS may insert in the RL SETUP/ADDITION FAILURE the available bit rate parameters (UL and/or DL). Those parameters are optional, and defined as in the load information procedure (Ref. [R3-99A06]).

2.2   Queuing indication

During the setup of a DCH for a NRT RAB it shall be possible to momentary queue the request if the resources are not momentary available. This is useful for an optimised transmission of non real time data. Thus the RL SETUP REQUEST, RL RECONFIGURATION PREPARE and RL RECONFIGURATION shall contain the *Allowed queuing time* parameter (whose default value is 'no queuing'). Note that the queuing is currently used in case in RANAP RAB assignment procedure, and thus shall also be supported by Iur in case the needed resources are not part of the Serving RNS.

2.3   DL Reference power

The DL reference power is used to prevent the power drifting problem (i.e. drifting of the DL transmitted power in one RL from the desired value due to lost of L1 power control commands in air interface). The problem occurs only in soft handover (FDD only). Thus in case of soft handover, the SRNC receives the measured DL transmitted power used by the radio links and calculates a reference value (for example the average). This DL reference power is then communicated to the NodeB:s, that may use it as a reference for a convergence algorithm. The DL reference power is not the power to be used, but a reference where to converge.

As consequence, the DL reference power is included as optional parameter in the RL SETUP REQUEST and RL ADDITION REQUEST, and it can be used by SRNC in case some RLs are already allocated to that UE and a reference power has been already calculated. The DL reference power is not needed in the RL RECONFIGURATION PREPARE and RL RECONFIGURATION messages.

2.4 Maximum and minimum Eb/No setpoint

The maximum and minimum Eb/No setpoint, currently included as FFS in the RL SETUP REQUEST, RL ADDITION REQUEST, RL RECONFIGURATION PREPARE and RL RECONFIGURATION, are not needed because the OL power control commands carried in the FP are absolute values (thus SRNC can control the minimum and maximum Eb/No). No other use of such parameter is foreseen in the DRNS.

3 Proposals

- To include in RNSAP RL SETUP/ADDITION FAILURE the available bit rate as proposed in 2.1.

- To include in RNSAP RL SETUP REQUEST, RL RECONFIGURATION PREPARE and RL RECONFIGURATION the *Allowed queuing time* parameter (as proposed in 2.2), with the following description

  Allowed queuing time:

  This parameter specify the maximum queuing time, that is allowed in the DRNS. The default value is no queuing.

  The queuing shall be mentioned in the description of the procedures.

- The DL Reference power shall be an optional parameter in the RL SETUP REQUEST (now it is mandatory), and removed from RL RECONFIGURATION PREPARE and RL RECONFIGURATION.

- To remove the *maximum and minimum Eb/No setpoint* from the RNSAP RL SETUP REQUEST, RL ADDITION REQUEST, RL RECONFIGURATION PREPARE and RL RECONFIGURATION (they are currently marked as FFS).