TSG-RAN Working Group 2 (Radio layer 2 and Radio layer 3)   **TSGR2#4(99)381**
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Agenda Item   : 9.2.3
Source   : NTT DoCoMo
Title   : Power Control Parameters
Document for : Decision

1. Introduction
This contribution proposes the necessity of UL target SIR for uplink DPCH power control info stated in section 10.2.6.7 of 25.331 RRC Protocol Specification.

2. UL Target SIR for DPCH Initial power setting
In section 10.2.6.7 of 25.331 RRC Protocol Specification, there is one parameter, which is uplink interference level for a frequency at the UTRAN access point for UE to set DPCH initial output power. But UE needs to know the UL target SIR to set DPCH initial power since there is no preamble power ramping scheme in DPCH. Therefore it is proposed to add UL Target SIR in "Uplink DPCH power control info".

3. Parameters for PRACH Initial power setting
In section 10.2.6.5 of 25.331 RRC Protocol Specification, there is a parameter list for PRACH power control info as follows;

Parameters	REFERENCE	TYPE	NOTE	
UL target SIR		M		The usage of these parameters needs clarification and are also dependent on the WG1 RACH discussions.
Primary CCPCH DL TX power		M		
UL interference		M		
Constant value		M		

There are UL Target SIR and UL interference in the parameter list, but since there is a preamble power ramping scheme in PRACH, it is proposed to remove these parameters from section 10.2.6.5. UL interference should be a separate parameter from PRACH power control info. UL interference in system information is proposed to be used for the decision for cell re-selection to optimize uplink capacity (minimize UE transmission power) and there is no need for using it for PRACH power control (Confirmation at WG1 is needed). UL interference also can be provided by UTRAN by using Measurement Control Message for cell re-selection when using DPCH (how to provide is under   discussion).
There is a Primary CCPCH DL TX power in the parameter list, but since this parameter is already included in Measurement Information Element, therefore it is proposed to remove it.
There is a Constant value in the parameter list, but since this parameter is same as UL target SIR, therefore it is proposed to remove it.

4. Parameters for Report Quantities
In UE, DL outer-loop power control is working. DL Target SIR is dynamically modified according to the measured DL quality. When adding new RL, DL Target SIR is necessary to calculate the initial DL power for the RL to add. Therefore DL Target SIR is proposed to add in Report Quantities in Measurement Report message.

5. Proposal
(1) In section 10.2.6.5, it is proposed to remove PRACH power control info and add separate parameter, UL interference level (necessity is still needs to be discussed) to System Information message.

(2) In section 10.2.6.7, it is proposed to add UL Target SIR in Uplink DPCH power control info as shown as follows.

Parameters	REFERENCE	TYPE	NOTE	
UL target SIR		M		
UL interference		M		

(3) In section 10.2.7.11, it is proposed to add "DL target SIR".