

**To:** TSG RAN WG1  
**CC:** TSG RAN WG3, TSG RAN WG4

**Source:** TSG RAN WG2

**Title:** Reply to LS from WG1 on power control issues.

---

WG2 thanks WG1 for its LS on power control issues. Some of the mentioned issues have been investigated at the last WG2 meeting and progresses are summarised below. However a number of issues remain to be further studied, especially regarding the open-loop power control (points 5, 6, and 7 of the WG1 LS).

#### 2. Open loop power control

*I BTS measurement is not currently specified. No requirement on the rate of update of the information to be broadcast. The UL Load measurement (the total received signal power for a carrier within the cell) has been specified in 25.302. No requirement on the rate of update has yet been identified by WG2.*

#### 4. Slow power control

LS have been sent to WG1 on the status and benefits of slow power control.

#### 8. Outer loop power control

*WG1 would like to know whether the SIR target is varied in an incremental way (e.g. +0.5 dB) or whether the "absolute" value is provided?*

*When the bit rate varies, the SIR target is expected to be adjusted. Since the rate can change very quickly, there could be some rule to let the receiver adjust the SIR target in between layer 3 signalling event. The transmitter should adjust its transmit power to reflect the difference in target SIR. Is this covered in any of the WG2 or WG3 specification?*

In the downlink, The outer-loop power control algorithm can be in the UE. It means that less frequent power control command have to be sent to the UE (only the configuration for the outer-loop power control needs to be signalled from UTRAN to the UE). For the DL outer-loop power control, the initial SIR target, the minimum and the maximum value are sent to the UE each time a RB is set-up or reconfigured. Moreover, a control mechanism has been introduced, which allows the NW to prevent UE from increasing its SIR target. (See Tdoc R2-99796 for further details).

Moreover, outer-loop power control issue for TTD mode has been addressed (see Tdoc 99777 and Tdoc 99778) with a proposal to have UL SIR Target into the Uplink DPCH power control info in TTD mode. Lack of time did not allow to discuss the contribution.

#### 9 Impact on the compressed mode on outer loop power control:

*It remains to be evaluated whether the difference in SIR (between SIR in normal frames, in compressed frames and in recovery frames) will require some signalling.*

Two parameters have been defined at the last WG2 meeting:  $\Delta E_b/N_o$ , which indicates the delta in DL  $E_b/N_o$  target value to be set in the UE during the compressed frames

$\Delta E_b/N_o$ after, which indicates the delta in DL  $E_b/N_o$  target value to be set in the UE one frame after the compressed frames.

These two parameters are signalled to the UE, together with the parameters required for the compressed mode pattern. (see Tdoc 99795 and Tdoc 99806 for further details).