Agenda Item: AH21

Source: CWTS/CATT

To: TSG RAN WG1

Title: Coding of TPC commands in 1.28Mcps TDD

Document for: Decision

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1. Summary

The Coding of the TPC commands in 1.28Mcps TDD is in principle the same as in 3.84Mcps TDD. However due to the fact, that also 8PSK is used for 1.28Mcps TDD in addition to QPSK, as in 3.84Mcps TDD, the coding for this case has to be specified.

2. Introduction and comparison with 3.84Mcps TDD

The coding of the TPC command when using QPSK is the same as in the 3.84 Mcps TDD. In case of using 8PSK, there are 3 Bits available per symbol. Since the power control commands shall always be mapped on whole symbols, the power control command for 8PSK consists of 3 Bits. The coding is shown in the respective chapter 4.4.4.2 and gives maximum distance between the 'Up' and 'Down' command.

3. Proposal

We propose to add following paragraphs in the working CR for TS25.222 as the description of the coding of TPC commands in the 1.28Mcps TDD.

4.4.4   Coding of Transmit Power Control (TPC)

4.4.4.1   Coding of TPC for QPSK

The coding of the TPC commands for QPSK is the same as in the 3.84Mcps TDD cf. [4.3.3 Coding of Transmit Power Control], but the TPC command is an identifier sent in both, uplink and downlink.

4.4.4.2   Coding of TPC for 8PSK

The TPC command is an identifier sent in both, uplink and downlink, to instruct the Transmitter whether the Tx power has to be increased or decreased. The length of the TPC command is one symbol. The coding of the TPC command is shown in table XX

Table XX: Coding of the TPC for 8PSK

TPC	TPC Bits	Meaning
'Down'	000	Decrease Tx Power
'Up'	110	Increase Tx Power