

Source: **QUALCOMM**

Title: **Comments on 25.926 v3.0.0**

Document for: **Discussion & decision**

Introduction

This documents lists a number of areas in 25.926 which we believe need to be clarified or corrected.

Parameters for discussion

Number of CCTrCH for 384 kbps reference configuration

The number of CCTrCH for that configuration is set to one while PDSCH support is enabled. Since new definition for the number of CCTrCH includes CCTrCH(s) of any type (except PCCPCH) this value needs to be changed to two when DPCH & PDSCH support is enabled.

Maximum number of TF

The maximum number of TF capability is defined to be for all CCTrCH of all types. This approach requires some additional memory management or more complex memory structure in order to support CCTrCH reconfiguration when multiple CCTrCH are supported simultaneously (SCCPCH/DPCH or DPCH/PDSCH). Alternatively, selection of a simple memory structure and management currently requires additional memory to store the TF configurations associated with multiple CCTrCHs. We consequently suggest that this parameter is listed per CCTrCH or even per type of CCTrCH as different types of CCTrCH will have different requirements.

Maximum number of CCTrCH & DCH/DSCH codes

The number CCTrCH and the number of simultaneous DPCH/PDSCH codes represent somewhat equivalent capability from a code channel receiver point of view. For example, a UE could support 3 single code CCTrCHs or 1 single code CCTrCH and 1 dual-code CCTrCH. Another

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possible overlap is related to SCCPCH. The SCCPCH is included in the CCTrCH count but not in the DPCH/PDSCH code count. However a UE could very well support 4 single code CCTrCHs or 3 single code CCTrCH and a single code SCCPCH. In order to maximize UE resource utilization, we believe that it is necessary to clarify that the maximum number of supported CCTrCH is based on a single code CCTrCH assumption and that the maximum number of supported DSCH/DCH codes assumes that the SCCPCH is not received simultaneously.

Number of physical layer bits per 10 ms

In the downlink it is not clear whether this parameters only includes the used bits (based on the TFC with highest requirement) or whether it also includes DTX bits. In the latest case the current granularity for this parameter is not appropriate in case of parallel DPCH/PDSCH operation. For example, in the case of the 384 kbps reference configuration a value of 9600 allows for SF=8 DSCH mapping but does not leave any capacity for simultaneous DPCH reception. This currently forces the use of the next higher value which in that case is 19200 which has a significant impact on de-interleaver memory size.

Compressed mode

Based on current 25.926 text, the description of the 'physical layer bits per 10 ms' parameter assumes that the listed values correspond to uncompressed mode operation. However there is only a single compressed mode parameter support (yes/no) which implies that the terminal supporting compressed mode shall support all modes including compressed mode by SF reduction in all cases (except for SF=4). In effect this means that the terminal could use a lower spreading factor than the one listed in the UE capability when the compressed mode method is puncturing or higher layer signaling. We believe that it would be more appropriate to list the absolute UE capability value (for example SF=16 or number of PHY bits per 10 ms = 4800) and let the RRC choose the appropriate configuration based on this absolute value and compressed mode it chooses to use. With the SF=16 example, the base station could either set-up a channel with SF=32 and use compressed mode by SF reduction or set-up a channel with SF=16 and use the other two methods for compressed mode. This approach is quite relevant for the higher rates as those are likely to be best effort packet services and would therefore allow for compressed mode by higher layer scheduling.

Radio Frequency Bands

The frequency band parameter capability was removed from the FDD mode even though 25.101 lists two possible bands. Consequently, based on the current specification text, R'99 UE can not be implemented as the specification implicitly requires dual-band FDD operation and requirements for one of the band is not fully specified in 25.101. We believe that the FDD radio frequency band capability should be added again to reflect a, b or a+b operation.

BTFD & CCTrCH

The restrictions on BTFD utilization specified in 25.212 do not explicitly restrict the total number of CCTrCH while operating in BTFD. We would like to clarify that TFCI shall be used for all CCTrCH when the UE has to receive multiple CCTrCH simultaneously. Note that this requires a change to 25.212 (as opposed to 25.926).

Conclusion

We suggested a number of clarifications to 25.926. Based on meeting discussion and decision we will provide relevant change request(s) proposals for submission to TSG RAN WG2 and/or TSG T WG1.