Source: Lucent Technologies

Title: Text proposal for TS 25.211

Document for: Approval

Agenda item:

1   Introduction

TS 25.211 currently includes text which does not align with the agreed Tables describing DPCCH fields (Tables 2 and 9) [1]. This contribution proposes new text for sections 5.2.1 and 5.3.2 to ensure alignment between the Tables and corresponding text.

2   Text proposal – section 5.2.1

The parameter k in Figure 1 determines the number of bits per uplink DPDCH/DPCCH slot. It is related to the spreading factor SF of the physical channel as $SF = 256/2^k$. In general, the spreading factor may thus range from 256 down to 4. Note that an uplink DPDCH and uplink DPCCH on the same Layer 1 connection generally are of different rates, i.e. have different spreading factors and different values of k.

The exact number of bits of the different uplink DPCCH fields (N_{pilot}, N_{TPC}, N_{FBI}, and N_{TFCI}) is determined in Table 2. The field order and total number of bits/slot are fixed, though the number of bits per field may vary during a connection.

The N_{FBI} bits are used to support techniques requiring feedback between the UE and the UTRAN Access Point (=cell transceiver), including feedback (FB) mode transmit diversity and site selection diversity. The exact details of the FBI field in the frame structure shown in Figure 1 are for further study.

The values for the number of bits per field are given in Table 1 and Table 2. The channel bit and symbol rates given in Table 1 are the rates immediately before spreading. The pilot patterns are given in Table 3 and Table 4, the TPC bit pattern is given in Table 5.

3   Text proposal – section 5.3.2

The parameter k in Figure 9 determines the total number of bits per downlink DPCH slot. It is related to the spreading factor SF of the physical channel as $SF = 512/2^k$. The spreading factor may thus range from 512 down to 4.

The exact number of bits of the different downlink DPCH fields (N_{pilot}, N_{TPC}, N_{TFCI}, N_{data1} and N_{data2}) is determined in Table 9. The overhead due to the DPCCH transmission has to be negotiated at the connection set-up and can be re-negotiated during the communication, in order to match particular propagation conditions.

The DPCCH fields are spread using the same channelization code used for the DPDCH field. A channelization code for the highest bit rate to be served during the connection (for a given DPCH) should be assigned (with spreading factor SF_1).

There are basically two types of downlink Dedicated Physical Channel; those that include TFCI (e.g. for several simultaneous services) and those that do not include TFCI (e.g. for fixed-rate services). These types are reflected by the duplicated rows of Table 9. The channel bit and symbol rates given in Table 9 are the rates immediately before spreading.

4   References

[1]   3GPP RAN WG1 Technical Specification 25.211 Physical Channels and Mapping of Transport Channels (FDD) version 2.1.0.