Agenda item:

Source: **Philips**

Title: **Clarification of physical channel update in 25.212**

Document for: **Decision**

Introduction

The text in sub clause 4.2.14 "Multiplexing of different transport channels into one CCTrCH, and mapping of one CCTrCH onto physical channels" describes a restriction on the starting time of any new or re-configured transport channel. The new TTI must start on frame number which is a multiple of the maximum TTI in the multiplex. This restriction is required mainly to simplify the calculation of rate matching parameters, which can then be assumed to be constant over the duration of the longest TTI.

The current text does not fully cover the case of removal of a transport channel. In order to meet the requirement of constant rate matching parameters over the longest TTI interval, it is proposed that specification is extended to require that any change in TFCS (including removal of a transport channel) is only made at the boundary of the longest TTI in the multiplex.

The attached CR 25.212-036 incorporates the necessary changes.

Such a restriction would be dynamic, depending on the longest TTI in the multiplex, and this would need to be taken into account by higher layers, possibly introducing some complexity in scheduling. Therefore it may be worth considering an alternative simpler approach with a fixed restriction. This would be to only allow TFCS changes at CFN's which are multiples of 80ms (the longest possible TTI). If WG1 agreed, the CR could be updated to incorporate this simplification.

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.212 CR **036**   Current Version: 3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   ↑ *CR number as allocated by MCC support team*

For submission to: **TSG-RAN #7**   for approval   **X**   strategic   *(for SMG*
list expected approval meeting # here ↑   for information   non-strategic   *use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM   ME **X**   UTRAN / Radio **X**   Core Network
(at least one should be marked with an X)

Source: Philips   **Date:** 2000-01-11

Subject: Reconfiguration of TFCS

Work item:

Category: F   Correction   **X**   **Release:**   Phase 2
          A   Corresponds to a correction in an earlier release   Release 96
(only one category   B   Addition of feature   Release 97
shall be marked   C   Functional modification of feature   Release 98
with an X)   D   Editorial modification   Release 99 **X**
          Release 00

Reason for change: The current text in 4.2.14 does not specifically describe the case of TFCS reconfiguration where a transport channel is removed from the multiplex

Clauses affected: 4.2.14 "Multiplexing of different transport channels into one CCTrCH, and mapping of one CCTrCH onto physical channels"

Other specs affected: Other 3G core specifications   → List of CRs:
          Other GSM core specifications   → List of CRs:
          MS test specifications   → List of CRs:
          BSS test specifications   → List of CRs:
          O&M specifications   → List of CRs:

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

4.2.14 Multiplexing of different transport channels into one CCTrCH, and mapping of one CCTrCH onto physical channels

The following rules shall apply to the different transport channels which are part of the same CCTrCH:

1) Transport channels multiplexed into one CCTrCh shall have co-ordinated timings. When the TFCS of a CCTrCH is changed because ~~one or more~~a transport channel~~s~~ ~~i~~ ~~are~~is added to the CCTrCH or reconfigured within the CCTrCH, or removed from the CCTrCH, the change may only be made at the ~~TTI of transport channel i may only~~ start of a ~~in~~ radio frame~~s~~ with CFN fulfilling the relation

CFN~~i~~ mod F$_{max}$ = 0,

where F$_{max}$ denotes the maximum number of radio frames within the transmission time intervals of all transport channels which are multiplexed into the same CCTrCH, including any transport channel~~s~~ i which ~~are~~is added, ~~or~~ reconfigured or have been removed, and CFN~~i~~ denotes the connection frame number of the first radio frame of the changed CCTrCH.~~within the transmission time interval of transport channel i.~~

After addition or reconfiguration of a transport channel i within a CCTrCH, the TTI of transport channel i may only start in radio frames with CFN fulfilling the relation

CFN$_i$ mod F$_i$ = 0.

2) Only transport channels with the same active set can be mapped onto the same CCTrCH.

3) Different CCTrCHs cannot be mapped onto the same PhCH.

4) One CCTrCH shall be mapped onto one or several PhCHs. These physical channels shall all have the same SF.

5) Dedicated Transport channels and common transport channels cannot be multiplexed into the same CCTrCH

6) For the common transport channels, only the FACH and PCH may belong to the same CCTrCH

There are hence two types of CCTrCH

1) CCTrCH of dedicated type, corresponding to the result of coding and multiplexing of one or several DCHs.

2) CCTrCH of common type, corresponding to the result of the coding and multiplexing of a common channel, RACH in the uplink, DSCH ,BCH, or FACH/PCH for the downlink.

4.2.14.1 Allowed CCTrCH combinations for one UE

4.2.14.1.1 Allowed CCTrCH combinations on the uplink

A maximum of one CCTrCH is allowed for one UE on the uplink. It can be either

1) one CCTrCH of dedicated type

2) one CCTrCH of common type

4.2.14.1.2 Allowed CCTrCH combinations on the downlink

The following CCTrCH combinations for one UE are allowed :

x CCTrCH of dedicated type + y CCTrCH of common type

The allowed combination of CCTrCHs of dedicated and common type are FFS.

NOTE 1: There is only one DPCCH in the uplink, hence one TPC bits flow on the uplink to control possibly the different DPDCHs on the downlink, part of the same or several CCTrCHs.

NOTE 2: There is only one DPCCH in the downlink, even with multiple CCTrCHs. With multiple CCTrCHs, the DPCCH is transmitted on one of the physical channels of that CCTrCH which has the smallest SF among the multiple CCTrCHs. Thus there is only one TPC command flow and only one TFCI word in downlink even with multiple CCTrCHs.