Agenda item: **Reports of Adhocs**

Source: **Ad Hoc #21 chair**

Title: **Report from Ad Hoc #21: 1.28 Mcps TDD**

Document for: **Approval**

1 Introduction

Ad hoc #21 meeting on 1.28 Mcps TDD took place on January 17, 2001.

Starting Time: 20:00
End Time: 00:50

2 Discussion of Contributions

In the following, the discussion and the conclusions on the presented documents are given:

2.1 Minor contributions to the Working CRs

Tdoc R1-01-0119, "DTX of radio frames for 1.28 Mcps TDD", CATT/CWTS

No discussion.

Conclusion:

The proposal was accepted for the working CR for TS25.224 without modification.

Tdoc R1-01-0120, "Beamforming for 1.28 Mcps TDD", CATT/CWTS

Instead the proposed wording, a reference to the section for 3.48 Mcps TDD was recommended. In general, the section was seen to be redundant.

Conclusion:

A reference to the corresponding WB-TDD section should be included in the working CR. For both TDD options, the necessity of this section in TS25.221 is to be checked.

Tdoc R1-01-0121, "Time Slot Formats for 1.28 Mcps TDD", CATT/CWTS

No discussion.

Conclusion:

The proposal was accepted for the working CR for TS25.221 without modification.

2.2 Service Mapping Examples

Tdoc R1-01-0086, "Coding and Multiplexing Examples for TR25.944", Siemens

The 64kbps streaming was missing in the proposal. It was clarified that this will be added to a revised version of this proposal. Moreover, the channel coding for the FPACH will also be included.

Conclusion:

Further comments shall be given by the next meeting. The revised version shall be presented in WG1#19 for approval.

2.3 Measurements Related

Tdoc R1-01-0093, "Main path Rx Timing Deviation for 1.28 Mcps TDD", Siemens

The measurement granularity should be removed because this is within RAN4 responsibility. The necessity to report this measurement was doubted, because it will be used in NodeB only. It was clarified that this measurement will be used for the field 'Received starting position of the UpPCH (UpPCH$_{POS}$)' within the FPACH information to control the PRACH timing. Thus, the measurement can be compared to the 'Rx Timing Deviation' in TDD that is used to control Timing Advance for 3.84 Mcps TDD. Nevertheless, the necessity for the definition of such a measurement and the precision was questioned, because the setting of the FPACH field is implementation specific.

Conclusion:

The concerned parties were asked for offline discussions. In case of an agreement on that measurement the proposal should be reconsidered in the plenary. Anyway, the purpose of that measurement and a reference to the corresponding FPACH information field should be added. Moreover, the granularity should be removed.

Tdoc R1-01-0098, "Timing Advance (T$_{ADV}$) Measurement in 1.28 Mcps TDD", Siemens

The purpose of that measurement and the usage were asked for. It was clarified that the measurement is needed since the network doesn't know the timing of the inner Uplink Synchronisation Control loop. The measurement is needed to support the same functionality that is supported by the Rx Timing Deviation in 3.84 Mcps TDD. Nevertheless, it was felt that some procedure description is missing clarifying the purpose of that measurement.

Regarding the fact that RAN4 will meet one week before WG1#19, a quick agreement on the measurement was requested.

RAN 2 should be made aware of that new measurement. This could be handled without a LS.

Conclusion:

The concerned parties were asked for offline discussions. In case of an agreement on that measurement the proposal should be reconsidered in the plenary. Anyway, the granularity should be removed.

2.4 Random Access Related

Tdoc R1-01-0099, "Changes to the physical random access channel (PRACH) for 1.28 Mcps TDD", Siemens

The necessity of SF 4 was asked for. This was justified with the UTRA RACH message sizes. The text in the introduction in the document R1-01-0099 was somewhat misleading.

Conclusion:

The proposal was accepted for the working CR for TS25.221 without modification.

2.5 Initial Access Related

Tdoc R1-01-0126, "Modulation of the SYNC-DL", Siemens

The last line of the table should be removed.

Conclusion:

The proposal was accepted for the working CR for TS25.223 with the above modification.

2.6 FPACH Related

Tdoc R1-01-0091, "Description of the FPACH", Siemens

The reason for the proposed sizes for the FPACH fields 'Received starting position of the UpPCH (UpPCH$_{POS}$)' and 'Transmit Power Level Command for RACH message' was asked. They were justified with the possible cell ranges and UL sync precision.

Conclusion:

The proposal should be redrafted in order to distinguish between the description of the physical channels and physical layer control commands, which has to go into TS25.221, and the application of these commands, which has to go into TS25.224. The revised text proposals for TS25.224 should be presented in the plenary for approval.

Tdoc R1-01-0092, "Coding of FPACH", Siemens

It was asked, whether the FPACH fields are L1 or L3 information and it was clarified that they are L1 control commands. The necessity of a CRC for the FPACH information was doubted but it was clarified that without error detection the UE will start RACH transmissions with wrong power and timing that will severely affect al UEs that are allocated to that time slot. Moreover, it was clarified that the number of FPACH resources can be adapted to the NodeB's need.

There was a comment that the coding scheme was a little bit to complex. With a reduced number of bits and without interleaving the scheme was seen to give better performance with less complexity and overhead. It was clarified that (similar to the PICH) interleaving was necessary to cope with the different reliabilities of bits within the burst. As for the overhead, benefits were mentioned regarding implementation (with byte alignment) and future proof, as the physical layer fields can not be extended later on.

The subheadings were seen as misleading and the title of the section should be changed to 'Coding of the Forward Physical Access Channel (FPACH) information bits'.

Conclusion:

The proposal was accepted for the working CR for TS25.222 with the modifications as mentioned in the last paragraph above.

Tdoc R1-01-0123, "FPACH Structure and Coding for 1.28 Mcps TDD", LG Electronics

There was a comment that with the flexible resource allocation the scheme would mandate the support of multiple TS reception in the UE that was conflicting with the UE capabilities.

Conclusion:

The proposal was withdrawn.

2.7 TFCI Related

Tdoc R1-01-0075, "Correction of the Mapping of TFCI Code Word for very short TFCI for 8PSK", Samsung

No discussion.

Conclusion:

In principle the proposal was accepted for the working CR for TS25.222. According to offline comments there will be a revised version of the proposal that shall be presented in the plenary for approval.

2.8 Synchronisation & Power Control Related

Tdoc R1-01-0122, "Transmit power control for 1.28Mcps option", CATT/CWTS

?? The last paragraph of section 5.1.1.2 should be put into the informative annex on the power control procedure. The last but one paragraph of the same section should be removed at all, because it is implementation specific.

?? The heading of the section 5.1.1.3 should be renamed to 'Random Access Channel'.

?? The term 'power value' should be replaced by 'transmit power'.

?? In the DL section on 'out-of-synchronisation handling' a reference to 3.84 Mcps TDD should replace the proposed text.

?? The term 'network' should be replaced by 'higher layer signalling'.

?? The section on 'The power of the S-CCPCH' was seen to be incomplete, because the power settings are proposed on the transport channel and not on the physical channel basis. With the proposed definition the power settings for a FACH/PCH multiplex on the same physical channels would be different for the same physical channel. The section should be worked out for WG1#19.

?? The UL section on out-of-synchronisation handling was not accepted, since the NodeB should not be mandated to set the TPC commands in the proposed way. The section should be worked out for WG1#19.

Conclusion:

The proposal was accepted for the working CR for TS25.224 with all the modifications as mentioned above.

Tdoc R1-01-0095, "Performance Comparison of SIR- and Level-based UL Power Control in case of Fading AWGN interference", Siemens

No discussion.

Conclusion:

?? Based on this contribution the benefits of multiple power control streams were accepted.

Tdoc R1-01-0094, "Transmission of TPC commands in 1.28 Mcps TDD", Siemens

The expression 'UL/(DL)' was not clear. It should be mentioned that the example in the annex is for 1.28 Mcps TDD only.

Conclusion:

The proposal was accepted in principle for the working CR for TS25.224. A revised version should be presented in plenary that describes the UL only and adds a sentence that the scheme can be used for the DL as well, replacing UL by DL and vice versa. Also the comment on the example, see above, should be taken into account.

Tdoc R1-01-0096, "Coding of SS commands in 1.28 Mcps TDD", Siemens

The notes '(to be defined by WG4)' should be removed, whereas the square brackets should be kept.

Conclusion:

The proposal was accepted for the working CR for TS25.221 with the modification as mentioned above.

Tdoc R1-01-0097, "Transmission of SS commands in 1.28 Mcps TDD", Siemens

The paper was postponed due to ongoing offline discussions.

3 Summary

Adhoc 21 recommends to update the working CRs with the following contributions including the comments made during the discussion, see above:

TS25.221:

Tdoc R1-01-0120, "Beamforming for 1.28 Mcps TDD", CATT/CWTS

Tdoc R1-01-0121, "Time Slot Formats for 1.28 Mcps TDD", CATT/CWTS

Tdoc R1-01-0099, "Changes to the physical random access channel (PRACH) for 1.28 Mcps TDD", Siemens

Tdoc R1-01-0096, "Coding of SS commands in 1.28 Mcps TDD", Siemens

TS25.222:

Tdoc R1-01-0092, "Coding of FPACH", Siemens

TS25.223:

Tdoc R1-01-0126, "Modulation of the SYNC-DL", Siemens

TS25.224:

Tdoc R1-01-0119, "DTX of radio frames for 1.28 Mcps TDD", CATT/CWTS

Tdoc R1-01-0122, "Transmit power control for 1.28Mcps option", CATT/CWTS

The updated working CRs will be posted to the RAN1-reflector immediately after the WG1#18 meeting. Comments shall be provided before the WG1#19 meeting.

For some other contributions revised versions shall be presented in the plenary for approval:

Tdoc R1-01-0091, "Description of the FPACH", Siemens -> R1-01-0158, R1-01-0159

Tdoc R1-01-0075, "Correction of the Mapping of TFCI Code Word for very short TFCI for 8PSK", Samsung -> R1-01-0157

Tdoc R1-01-0094, "Transmission of TPC commands in 1.28 Mcps TDD", Siemens -> R1-01-0160

For two contributions, offline discussions were needed. If these result in an agreement before discussion in the plenary, they should be treated in the plenary as well:

Tdoc R1-01-0093, "Main path Rx Timing Deviation for 1.28 Mcps TDD", Siemens

Tdoc R1-01-0098, "Timing Advance (T_{ADV}) Measurement in 1.28 Mcps TDD", Siemens