

Agenda item: Reports of Adhocs
Source: Ad Hoc #21 chair
Title: Report from Ad Hoc #21: 1.28 Mcps TDD option
Document for: Approval

1 Introduction

Ad hoc #21 meeting on 1.28 Mcps TDD option, August 24, 2000.

Starting Time: 8:00
End Time: 12:30

2 Discussion of Contributions

In the following, the discussion and the results on the presented documents are given.

2.1 Contributions on technical reports

Tdoc R1-00-1064, "The proposed TR structure on Smart Antenna", CWTS

Discussion:

- The references to particular Tdocs should be removed from the reference section. Only references to TR's or TS's should be included. The reference to the WID in the scope should be removed as well.
- In the scope it should be clarified that smart antennas are in the UTRAN.
- A section on 'Benefits' should be added, and the subsection on the 'impact on the cell range' should be shifted to this new section, since this is more seen as a benefit than as an impact on existing functionality like procedures, measurements, protocols.
- The scope should be aligned with the objective of the WI, so it should be made clear already in the scope that this WI is to investigate the impact of Smart antennas on the present specifications for both FDD and TDD and to help the TSG RAN WG1-4 groups to specify the changes to existing TDD and FDD specifications.
- It was clarified that the basic support for the usage of smart antennas in 1.28 Mcps is given already by the possibility of assigning individual MA also to DL channels. A corresponding sentence (e.g., 'Basic support for smart antennas is given by the possibility of assigning individual MA to the UEs also in DL. That is included already in TR25.928.')
- It was asked what is meant with WG2 simulation models. This is meant as a placeholder for WG2.
- It was asked whether there should be some description of algorithms in the TR, and it was clarified that the purpose of the TR is to investigate the impact of smart antennas on the present specifications for FDD and TDD, so it should describe new functionality and procedures that have to be included in the system but no concrete algorithms should be described, because they are implementation specific.

Conclusion:

- AdHoc#21 recommends to update the TR according to the first five bullets above, and to present it to WG1 plenary for approval before submission to RAN#9. Since the basic support of the smart antenna feature is given by the possibility of individual midamble assignment already, AdHoc#21 recommends to update the TR accordingly.

2.2 Contributions on working CRs

Tdoc R1-00-1012, “Burst type of 1.28Mcps TDD”, CWTS

Discussion:

- It was clarified by the proponent that the whole section is new and that for this reason no revision marks have been used.
- It was mentioned that according to the current specification the time slot is a special duration and the content of a time slot is a burst. Thus, the term ‘normal’ should rather be used for the burst than for the time slot.
- A proposal was made to align the burst terminology with 3.84 Mcps TDD, however, since there is only one burst type for DPCH in 1.28 Mcps, burst type numbering seems not to be appropriate. The term normal is used to distinguish this burst from the bursts used in a DwPTS or in a UpPTS.

Conclusion:

- AdHoc#21 recommends to update the text proposal according to the second bullet and to include this in the working CR for 25.221.
- As a general conclusion, it was clarified that revision marks in the working CRs shall be used so that they reflect the changes with respect to the latest version of the release 99 specifications. These revision marks should also be used for the text proposals.

Tdoc R1-00-1013, “Spreading and generation of midambles in the 1.28 Mcps TDD”, CWTS

Discussion:

- The reference in section 6.2 to section 4.1.1 should be corrected and the title of this section should be added for clarity.
- It was noted that the section 6.2.1.1 was a little bit misleading since the UE shall use SF=16, but SF=1 is possible. Since this is just copied and pasted from 3.84 Mcps TDD specifications, a proper change should be included in a CR for 3.84 Mcps TDD later, and the section for 1.28 Mcps TDD can be aligned afterwards.

Conclusion:

- AdHoc#21 recommends to update the text proposal according to the first bullet and to include this in the working CR for 25.221.

Tdoc R1-00-1014, “PUSCH PDSCH PICH for 1.28Mcps TDD”, CWTS

Discussion:

- It was clarified that the PICH in 1.28 Mcps will use always the normal burst, so that the sentence ‘The same burst type is used for the PICH in every cell’ is misleading and should be removed.
- It was commented that the sentence ‘The usage of two codes allows an easy time multiplexing with the P/S-CCPCH and about the same number of PIs per slot as in the 3.84 Mcps TDD.’ is rather descriptive than specifying and should be replaced by a sentence saying that two codes will always be used but not why two codes will be used.
- It was asked for the meaning of ‘the same antenna pattern configuration as the P-CCPCH’. It was clarified that this does mean transmission with whole cell coverage. It should be ensured that the antenna pattern configuration pattern is described in the section on P-CCPCH, so that this term is clear.

Conclusion:

- AdHoc#21 recommends to update the text proposal according to the first two bullets and to include this in the working CR for 25.221. The third bullet has to be taken into account for the sections that specify the P-CCPCH.

Tdoc R1-00-1015, “Midamble allocation in the 1.28Mcps TDD”, CWTS

Discussion:

- It was asked whether the recent changes for 3.84 Mcps TDD will be taken into account for the 1.28 Mcps TDD as well. Anyway a lot of changes will be necessary to align even the wording with the 3.84 Mcps TDD specification in version 3.4.0.
- It was clarified that an appropriate text proposal will be presented for the next WG1 meeting.

Conclusion:

- AdHoc#21 recommends not to update the working CR for 25.221 with this text proposal but to wait for the contribution in WG1#16 which should be based on version 3.4.0 of the 3.84 Mcps TDD specifications.

Tdoc R1-00-1016, “Basic midamble codes and midamble allocation schemes for the 1.28 Mcps TDD”, CWTS

There was no discussion on this contribution.

Conclusion:

- AdHoc#21 recommends to include this text proposal in the working CR for 25.221.

Tdoc R1-00-1021, “Dedicated Transport Channels for 1.28Mcps option”, CWTS

There was no discussion on this contribution.

Conclusion:

- AdHoc#21 recommends to include this text proposal in the working CR for 25.221.

Tdoc R1-00-1061, “Common physical channels of the 1.28Mcps TDD”, CWTS

Discussion:

- It was clarified that Block STTD for the P-CCPCH is still FFS. A change regarding the MA allocation will be needed later for this section, for the case that Block STTD will be introduced.

Conclusion:

- AdHoc#21 recommends to include this text proposal in the working CR for 25.221.

Tdoc R1-00-1062, “Common transport channel in 1.28Mcps TDD”, CWTS

Discussion:

- The abbreviation MIB should be added to the abbreviation list.
- Since the whole subsection is part of a section on 1.28 Mcps the first sentence should not start with ‘In 1.28 Mcps TDD’.
- In section 8.2.1 a reference to 25.223 should be added to clarify where the DwPTS sequences are defined.
- The last sentence in section 8.2.1 should be revised so that it is clear that the position of the MIB is indicated by a special combination of the phase differences of the DwPTS with respect to the P-CCPCH midamble.

Conclusion:

- AdHoc#21 recommends to update the text proposal according to the bullets above and to include this in the working CR for 25.221.

Tdoc R1-00-1063, “Transport channel to Physical channel mapping for 1.28Mcps TDD”, CWTS

Discussion:

- The physical channels ‘DwPTS’ and ‘UpPTS’ should be renamed to ‘DwPCH’ and ‘UpPCH’ to distinguish between channels and time slots.

Conclusion:

- AdHoc#21 recommends to update the text proposal according to the bullet above and to include this in the working CR for 25.221. The new name has to be taken into account for all other text proposals as well.

Tdoc R1-00-1018, “Subframe segmentation in 1.28Mcps”, CWTS

Discussion:

- It was clarified that the title of this document has been incidentally exchanged with the title for Tdoc R1-00-1019.

- The formula for p has to be corrected according to the latest version 3.3.0 of the 3.84 Mcps TDD specification.

Conclusion:

- AdHoc#21 recommends to update the text proposal according to the second bullet and to include this in the working CR for 25.222.

Tdoc R1-00-1019, “Physical channel mapping”, CWTS

Discussion:

- It was clarified that the text in section 4.2 has not been changed, only the new figure had been added.
- In the list of coding/multiplexing steps a bullet ‘sub frame segmentation (1.28 Mcps TDD only)’ should be added.
- It was asked to use the same symbols and abbreviations for the bit streams as output of the individual coding/multiplexing blocks as in the 3.84 Mcps TDD option.

Conclusion:

- AdHoc#21 recommends to update the text proposal according to the second bullet and to include this in the working CR for 25.222.

Tdoc R1-00-0870, “TFCI coding for 8PSK ”, Samsung

Discussion:

- The reference in the last sentence of the text proposal should be corrected.
- The index of the MSB should be corrected from ‘5’ to ‘4’ on the last page in the first sentence.

Conclusion:

- AdHoc#21 recommends to update the text proposal according to the bullets above and to include this in the working CR for 25.222.

Tdoc R1-00-1017, “Modulation and combination of physical channels in the 1.28 Mcps TDD”, CWTS

Discussion:

- Since there has been a major change to this section related to the introduction of gain factors for TDD, it was asked whether these changes for 3.84 Mcps TDD will be taken into account for the 1.28 Mcps TDD as well and it was clarified that this will be done in a contribution for the next WG1 meeting.

Conclusion:

- AdHoc#21 recommends not to update the working CR for 25.223 with this text proposal but to wait for the contribution in WG1#16 which should be based on version 3.4.0 of the 3.84 Mcps TDD specifications.

Tdoc R1-00-1022, “Modulation for 1.28Mcps TDD”, CWTS

Discussion:

- An editorial update of this section seems to be necessary, removing some typos in the table that defines the signal point constellation.
- It was asked whether there has been any investigation on the shifted 8 PSK, as proposed and set FFS in WG1#13. This has not been done so far.
- It was clarified that the acceptance of this text proposal (without the shifted 8 PSK) does not mean that the shifted 8 PSK is no longer FFS.

Conclusion:

- AdHoc#21 recommends to update the text proposal according to the first bullet above and to include this in the working CR for 25.223.
- As a general conclusion, it was clarified that the acceptance of a particular text proposal for the working CRs does not mean a conclusion on one of the study items that are marked as ffs in the TR25.928.

- As a second general conclusion for the working CRs and the new sections for 1.28 Mcps TDD, AdHoc#21 recommends to use references to the existing sections on 3.84 Mcps TDD wherever appropriate.

Tdoc R1-00-1023, “Synchronization codes for 1.28Mcps TDD”, CWTS

Discussion:

- The last sentence of section 9.1 should be removed because it is not appropriate for the specification.
- The figure showing ‘the frame structure around DwPTS’ should be replaced by a figure showing the burst format in the DwPTS, and a reference should be added to the frame structure that is depicted elsewhere.
- Since the terminology of SYNC and SYNC1 is quite unclear, these codes should be renamed to SYNC-DL and SYNC-UL.
- The terminology of time slot and burst should be used according to the comments for R1-00-1012.

Conclusion:

- AdHoc#21 recommends to update the text proposal according to the bullets above and to include this in the working CR for 25.223.

Tdoc R1-00-1020, “Cell Search for 1.28Mcps TDD”, CWTS

Discussion:

- The text proposal should be redrafted according to the new terminology for SYNC and PTS.
- Since the whole section only describes one possibility how to implement the cell search, the section should be moved to an informative annex, as was done for FDD and 3.84 Mcps TDD as well.

Conclusion:

- AdHoc#21 recommends to update the text proposal according to the bullets above and to include this in the working CR for 25.224.

2.3 Other contributions

Tdoc R1-00-1131, “Coexistence between the 3.84 Mcps TDD option and the 1.28 Mcps TDD option”, Telia, Vodafone Group, BT, Mannesmann Mobilfunk, Telenor

Discussion:

- It was confirmed that the investigation of coexistence scenarios is in the scope of WG4. As indicated in the LS from WG4 (Tdoc R1-00-0773), for adjacent bands the necessary investigation will be performed within WG4 and the results will be included in the technical report 25.945 for the low chip rate option.
- It was clarified from the sourcing companies that they interpreted the wording in the LS from WG4 (‘TSG RAN WG4 likes to inform TSG RAN WG1 that it sees no impact on WG4 specification resulting from the operation in the same band, since this is more related to the physical layer than to radio parameters’) as such that WG1 should deal with this issue. Since the LS was noted only in WG1#13 meeting, this contribution was meant to raise the discussion again in WG1.
- It was clarified that operation of different modes of UTRA in the same band should involve also the investigations of coexistence of all different modes/options of UTRA (FDD, 3.84 TDD, 1.28 TDD) and not only 3.84 TDD and 1.28 TDD. As mentioned in the LS from WG4, the operation in the same band, e.g. in country border regions and uncoordinated operation, involve not only the discussion on frame structures but also discussion in regulatory bodies, so that operation of different Modes of UTRA (FDD or TDD) in the same band has not been considered in WG4 so far.
- It was clarified that according to the decision of SA#8 meeting, TSG RAN is asked to try to ensure interoperation in the same geographic area using different TDD/FDD options with different TDD bands only, i.e. no overlaying of narrowband and wideband TDD.
- It was commented that the proposal as mentioned in the Tdoc R1-00-1131 would lead to high and undesirable delay for both the 3.84 Mcps and 1.28 Mcps TDD option.

Conclusion:

- The document was noted.

3 Conclusion

AdHoc#21 recommends to update the draft TR on smart antennas according to the conclusions above, and to present the updated technical report for WG1 approval in WG1 meeting #15. The updated report is included in Tdoc R1-00-1152. The basic support of smart antennas by the possibility of individual midamble assignment for DL channels should also be mentioned in the status report for this work item.

Furthermore, AdHoc#21 recommends to update the working CRs for the specifications 25.221 to 25.224 according to the conclusions above, and to present them for WG1 approval in WG1 meeting #15. The updated working CRs are included in Tdoc R1-00-1148, R1-00-1149, R1-00-1150, and R1-00-1151.