Agenda item: 13

Source: Ad Hoc #1

Title: Report from Ad Hoc #1, part 2

Document for: Approval

1 Introduction

Ad hoc #1 meeting on TDD, part 2, March 2, 2000.

Starting Time: 9:00
End Time: 12:15

2 Documents relevant for TDD

In the following, the discussion and the results on the presented documents are given. The recommended output documents (CRs, text proposals, LS, work item descriptions) are summarised in the next section.

2.1 Low chip rate option

Tdoc 0283/00, "Work item description for low chip rate TDD option", CWTS

Discussion:
• It was clarified that this same work item description is presented also to the other working groups within RAN and is intended for RAN approval.

Conclusion:
• AdHoc 1 recommends to accept the work item description contained in Tdoc 0283/00.

Tdoc 0404/00, TR25.928v0.0.1, Nokia

Discussion:
• The document was noted.

Tdoc 0356/00, "Structure of the Technical report 25.928 (1.28 Mchip/s TDD physical layer)", Nortel

Discussion:
• There were several comments supporting to add additional sections as requested in Tdoc 0356/00.
• There was a concern raised on how to keep the time schedule as agreed at the last WG1 meeting for the introduction of the low chip rate option when more background information is requested now.
• There was a comment that Tdoc C59/99 lists some operator requirements on TDD which should be taken into account when preparing inputs for the technical report.

Conclusion:

Structure of the report:
• It was agreed that the structure of the technical report should be as follows:
    - radio requirements

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- 2.1 a) of Tdoc 0356/00
- 2.1 b) of Tdoc 0356/00
- operational aspects
- handover and cell selection/reselection
- particular characteristics of low chip rate option
  - high level characteristics
    - table format (according to Tdoc 0356/00)
  - sections of TR25.928V0.0.1 in present form
  - performance
- For each section of the "sections of TR25.928V0.0.1 in the present form", there are three possibilities:
  - The section is noted as irrelevant. (1)
  - The section is noted as being the same as for 3.84 Mcps. (2)
  - The section contains the description of the low chip rate solution. (3)
- The structure of the "sections of TR25.928V0.0.1 in the present form" (usually not down to the lowest subsection level) in case (3) mentioned above should be as follows
  - Description
  - Rationale
  - Explanation of differences compared to 3.84 Mcps
- A new version of the technical report taking into account the items mentioned above will be prepared and should be presented in the plenary.

Means to keep the time schedule:
- The status of each section of the technical report should be indicated as being
  - Under study or
  - Approved.

  This allows to put text to the technical report also if not yet all the explanatory material is available in order to progress the work.
- It is recommended that we adopt the following working procedure in WG1 for the low chip rate TDD inputs:
  - The input papers by CWTS are sent via the reflector.
  - After that, there is one week time to ask questions and to comment on the input.
  - An update of the input papers including the answers to the comments and questions will be prepared to be put in the technical report.

  This shall avoid that the time schedule is endangered by several rounds of questions. All questions, comments and requests for clarification should be sent according to a given deadline of 1 week in order to be able to finalise the respective technical items and thus keep the time schedule for the introduction of the low chip rate option. The questions, comments and requests for clarification should be such that they cover every background information needed for an approval of the respective section in the technical report.
- It was mentioned that it is possible to hold ad hoc physical meetings, if needed with participants from different RAN working groups, particularly devoted on the issue of the low chip rate in addition to the regular working group meetings. Such ad hoc meetings can be scheduled as required. This is another means to accelerate the work progress on the low chip rate option.

Tdoc 0284/00, "Frame structure for low chip rate TDD option", CWTS

Discussion:
- The parameters m and n should be explained.
- The parameters should run from 0 to m-1 and 0 to n-1 instead of 0 to m and 0 to n in order to be consistent with the format used in the 3GPP specifications.

Conclusion:
- The text proposal as given in Tdoc 0284/00 is recommended to be included in the technical report 25.928 taking into account the comments as mentioned above. The editor should put the text in the structure as mentioned above: description, rationale, explanation of differences.
- The deadline for asking questions and sending comments on Tdoc 0284/00 is March 9, 2000, according to the procedure mentioned above.

Tdoc 0286/00, "Mapping of BCH, PCH onto physical channels", CWTS

Discussion:

- There was a question whether for the RACH, slot 1 is preferred, but slot 0 can also be used. This was confirmed. The notation of brackets indicating not preferred case should be explained.
- There was a question on the fixed positions for the BCH and PCH mapping. It was mentioned that the reason for the fixed allocation is to know where to find the broadcast channel. Also, if we have different ratio of uplink/downlink allocation in different cells, this will reduce interference if always time slot 0 is used in all cells for broadcast channel. Also, the UE can find the beginning of the block; there is one bit to indicate the beginning of each block.
- The synchronisation channel should only be a physical channel and not a transport channel since it does not contain higher layer information.
- There was a question why the time slot 1 is better for FACH compared to time slot 0. The answer was that in time slot 0, the broadcast channel is transmitted which has to cover the whole range of the cell and which has to be transmitted in an omnidirectional way. The FACH on the other hand can use beamforming to reduce the needed power.

Conclusion:
- The text proposal as given in Tdoc 0286/00 is recommended to be included in the technical report 25.928 taking into account the comments as mentioned above. The editor should put the text in the structure as mentioned above: description, rationale, explanation of differences.
- The deadline for asking questions and sending comments on Tdoc 0286/00 is March 9, 2000, according to the procedure mentioned above.

Tdoc 0287/00, "Mapping of RACH onto physical channels", CWTS

Discussion:
- There was a question that, since the RACH is synchronised, timing advanced and power controlled, why it is only sent in time slot 0 and why it cannot be sent on any other time slot. The answer was that first, this time slot has no interference since it is next to the switching point if all cells use the same time slot. Secondly, since the number of RACH is reconfigurable, it only needs to be broadcast how many RACHs there are and not in addition in which time slot, on which code etc. Thus, the signalling load is reduced.
- There was a question whether the power indication is a relative indication for the RACH. The answer was that the RACH is detected and the value is compared with a threshold, so that it is a relative indication.
- There was a question about the text saying that up to eight RACH blocks are possible and only 4 are depicted in the figure. It was clarified that the figure only gives an example, the number is reconfigurable. The default number is four.

Conclusion:
- The text proposal as given in Tdoc 0287/00 is recommended to be included in the technical report 25.928 taking into account the comments as mentioned above. The editor should put the text in the structure as mentioned above: description, rationale, explanation of differences.
- The deadline for asking questions and sending comments on Tdoc 0287/00 is March 9, 2000, according to the procedure mentioned above.

Tdoc 0285/00, "Smart antenna technology for low chip rate TDD option", CWTS

Discussion:
- There was a comment that the smart antenna issues will explain several other technical issues, e.g. the frame structure. These relationships should be explained.
- An explanation should be added giving the tradeoff between the performance of beamforming and the requirements on the resource allocation scheme. For instance, the mobile has to transmit regularly so that the Node B can determine the antenna weights. For instance for a fast moving user (120 km/h), one time slot every 5 ms is required. Also, it was commented that a list of possible configurations when we want to use beamforming should be added. For instance, in case of a lot of DL packet traffic, due to the needed minimum transmission rate in the uplink for every user, the uplink can be blocked. Also, the case of a mix of users applying beamforming and not applying beamforming should be addressed.
- It was clarified that the diagram given in Tdoc 0285/00 is useful for the technical report, but will not be contained in the specification since it is implementation dependent.

Conclusion:

- The text proposal as given in Tdoc 0285/00 is recommended to be included in the technical report 25.928 taking into account the comments as mentioned above. The editor should put the text in the structure as mentioned above: description, rationale, explanation of differences.
- The deadline for asking questions and sending comments on Tdoc 0285/00 is March 9, 2000, according to the procedure mentioned above.

Tdocs 0288/00, 0289/00, 0290/00, CWTS

Withdrawn, an updated version of these documents will be prepared for the next meeting.

2.2 Liaison statements

Tdoc 0419/00, "Clarification on LS on UTRAN BER measurements", Siemens

Conclusion:
- Ad hoc 1 recommends to approve the LS contained in Tdoc 0419/00.

2.3 Power control

Tdoc 0???/00, "Clarifications on power control for TDD", Siemens

Discussion:
- This paper is an update of the version presented earlier taking into account the comments received.
- There was a comment to replace "it" by "the TPC command" in one of the sentences to make the reference clear.
- The TPC command should be noted to be "up" or "down" instead of "1" or "0".

Conclusion:
- The update is available in Tdoc 0380/00. AdHoc 1 recommends to accept CR012r1-224 contained in Tdoc 0380/00.

2.4 Work item descriptions

Tdoc 0379/00, "Proposal for Work Item Description 'NodeB Synchronisation for TDD'", Siemens

Conclusion:
- Ad Hoc 1 recommends to accept the work item description contained in Tdoc 0379/00.

Tdoc 0231/00, " Proposal for Work Item Description 'Support of Location Services in UTRA TDD'", Siemens

Conclusion:
- Ad Hoc 1 recommends to accept the work item description contained in Tdoc 0231/00.

Tdoc 0375/00, "Proposal for Work Item Description 'Hybrid ARQ II/III'", Siemens

Conclusion:
- Ad Hoc 1 recommends to accept the work item description contained in Tdoc 0375/00.

3 Conclusion

It is recommended by Ad Hoc #1 on TDD to modify the existing set of WG1 specifications based on the following CRs:

Nr.	CR	Tdoc	Topic	Source
1	CR012r1-224	0380/00	Clarifications on power control for TDD	Siemens AG

It is recommended by Ad Hoc #1 on TDD to include the following text proposals in the technical report TR25.928:

Nr.	Tdoc	Topic	Source
1	0284/00	Frame structure for low chip rate TDD option	CWTS
2	0286/00	Mapping of BCH, PCH onto physical channels	CWTS
3	0287/00	Mapping of RACH onto physical channels	CWTS
4	0285/00	Smart antenna technology for low chip rate TDD option	CWTS

Furthermore, it is recommended to send LS to other working groups based on the following drafts:

Nr.	Tdoc	Title	Source	TO:	CC:
1	0419/00	Clarification on LS on UTRAN BER measurements	Siemens AG	WG2, WG3, WG4	-

Also, it is recommended to agree on the following work item descriptions:

Nr.	Tdoc	Title	Source
1	283	Work item description for low chip rate TDD option	CWTS
2	379	Proposal for Work Item Description 'NodeB Synchronisation for TDD'	Siemens
3	231	Proposal for Work Item Description 'Support of Location Services in UTRA TDD'	Siemens
4	375	Proposal for Work Item Description 'Hybrid ARQ II/III'	Siemens

The "Means to keep the time schedule" for the low chip rate option as given in section 2.1 above should be approved in WG1.

Furthermore, the new version of the technical report 25.928 should be presented in the plenary.