

Agenda item: 9/10
Source: Ad Hoc chair
Title: Report from Ad Hoc #30: TDD NodeB synchronisation
Document for: Approval

1 Introduction

Ad hoc #30 meeting on TDD NodeB Synchronisation, July 5, 2000.

Starting Time: 15:45
End Time: 19:00

2 Discussion of the Study List for NodeB Sync

In WG1#13 it was agreed that a study item list should be produced serving as a basis for assessing the performance of cell synchronisation methods and to form the basis of a comparison between the methods proposed. It was decided to extend a basic list, included in R1-00-0770, via email discussion until WG1#14.

Since no discussions took place in the meantime, AdHoc#30 recommends to use the basic study list in R1-00-0770 for the assessment/comparison.

3 Discussion of Contributions

Contributions for the AdHoc#30 were focussed on the WI procedure that had been decided in RAN. In the following, the discussion and the conclusions for the presented documents are given.

Tdoc R1-00-0941, "Proposed TR on 'NodeB Synchronisation for TDD'", Siemens AG

The document contains a draft for the technical report that has to be produced for this work item according to the RAN#8 decisions.

Discussion:

- The scope of the document in section 3 was missing. A first draft for the scope was based on the objective included in the work item sheet. The wording was modified to 'This TR describes the solution recommended to enable the synchronisation of NodeBs in UTRA TDD beyond that included in Rel. 99. '.
- It was asked whether WG1 should aim for one or several methods, providing the NodeB Sync. It was clarified that the technical report should describe one solution recommended by WG1. The solution should include preferably only one method, however, it is not excluded to specify several methods, in particular if they are seen appropriate for different application scenarios.
- In section 4 a reference to the document, describing the sync port should be added
- In section 5, with respect to the 'seamless HOV' motivation it was asked whether the work item should provide means to measure the relative timing deviation in the UE? It was clarified that the work item aims to provide means for absolute timing synchronisation and do not preclude the use of relative Time Difference of Arrival from the UE.
- The term 'UL/DL frame' should be replaced by 'UL/DL time slot'.
- The term 'seamless HOV' as a motivation should be replaced by 'HOV'.
- In section 6 the title should be changed to 'accuracy requirements', since only these requirements are listed.
- Regarding the requirements, it was asked whether these requirements should be requirements for the development of the recommended solution or whether these requirements should be met by

any equipment. It was clarified that the requirement is currently used for the development of the recommended solution. Requirements to be met by equipment are rather in the scope of RAN WG4.

- The optional enhanced requirement (100ns) and the sentence on LCS should be removed.
- In section 7, it was not clear why the 'via the air' method should provide 'cell' synchronisation rather than 'NodeB' synchronisation. It was clarified that 'cell' sync should not exclude the possibility for NodeB sync and proprietary solutions on the cell level. Thus, the second bullet was changed to 'Synchronization of cells or NodeB's via the air interface'. Since RAN WG3 is seen responsible for this kind of architectural questions, clarification should be requested from this group.
- In section 7.1 the term 'proposals' should be replaced by 'solutions' since this is misleading. Moreover, it should be clarified that the 'synch port' solution has been specified already in release 99.
- The last sentence in section 7.1 saying 'It is assumed that the Node Bs/cells can adjust their timing and clock frequency based on the frequency and amount of timing correction', should be removed since this is implementation dependent and should not be part of the solution.
- In section 7.2. 'NodeB' should be replaced by 'cell', since the SCH belongs to a cell. Moreover, the 'SCH' method should be formulated as general as possible, thus, the word 'designated' in the term 'designated neighbouring Node's Synchronization Channel (SCH)' should be removed.
- Some minor changes in the following sections should be made by the drafting group.
- A section on backward compatibility should be added. The content of this section should be drafted by a drafting group.

Conclusion:

AdHoc #30 recommends to use the document with the changes mentioned above and the changes made by the drafting group as a first version for the TR covering the WI 'TDD NodeB Synchronisation'. A liaison statement should be sent to RAN WG3 in order to clarify the issue 'cell/NodeB' sync. The proposal for the first version is included in Tdoc R1-00-0958.

Tdoc R1-00-0913, "Draft LS to WG3 on the WI: TDD NodeB Synchronisation", Siemens AG

It was proposed to send the LS included in this contribution to WG3 to ask for their support for items which affect this group.

Discussion:

- A third item regarding the 'cell/NodeB' sync issue should be added due to the comments mentioned above.
- No WG1 opinion regarding the advantages of a 'cell' synch should be mentioned.

Conclusion:

AdHoc #30 recommends to send a LS to RAN WG3 based on a revised draft included in Tdoc R1-00-958.

Tdoc R1-00-0912, "Draft LS to WG2 on the WI: TDD NodeB Synchronisation", Siemens AG

It was proposed to send the LS included in this contribution to WG2 to ask for their support for items which affect this group.

Discussion:

- Since no discussion has taken place in WG1 regarding the necessity of resource blocking for a particular solution, WG2 should be spared from premature questions.

Conclusion:

No Liaison should be sent to RAN WG2 at this time.

4 Conclusion

In conclusion, AdHoc #30 recommends to use Tdoc R1-00957 as the first version for the TR on the WI 'TDD NodeB synchronisation' and Tdoc R1-00-958 as a draft LS to WG3, and to present them in RAN WG1 plenary for approval.