

Title: LS to WG3: Open issues for work item on Node B synchronisation

Source: TSG-RAN WG1

To: TSG-RAN WG3

Contact person: Stefan.Oestreich@ICN.SIEMENS.DE (Stefan Oestreich)

TSG RAN WG1 as the leading working group has begun work for R2000 according to RP-00-0055, proposed work item "Node B Synchronisation for TDD".

Currently, there are two proposals within WG1 how to synchronize different Node Bs over the air. One method proposes to use the existing SCH codes, the other proposes new synchronisation sequences to be transmitted on the RACH timeslot by the Node B.

Except for these differences on the air interface, the two methods are quite similar with respect to the measurements results and the higher layer processing.

Following the decision in RAN#8 WG1 is tasked to prepare a technical report on this work item. Part of the contents of this report are outside the scope of WG1 and therefore WG1 asks for support by WG3 to complete the report in time. Time is critical, since the report has to be finalized and approved at the next WG1 meeting on August 22-25.

Irrespective of the report, WG1 sees the following main issues, where answers and support is needed from WG3:

- **Cell or Node B synchronisation:** It is currently not clear in WG 1, whether a standardised solution should provide synchronisation at Node Bs or cell level. From WG1 perspective it is anyway going to be the same piece of hardware doing the measurement. The unclear issue in WG1 seems to be whether the timing correction from RNC is sent for each cell or for each Node B.
- **Sub signalling:** Definition of the messages and commands that establish the transmission and measurement plan, initialize the measurements, contain the measurement results and adjust the cell/Node B timing.
- **Sync port:** The current specification of the sync port defines among others input signals and accuracies for this port as well as processing delays in a daisy chain configuration. However, the delay for the distribution of the sync signal from a masterclock or Node B to other Node Bs is not taken into account in the specification. Therefore, WG1 asks WG3 to consider means to compensate the propagation delay on the transmission line between Node Bs. WG1 sees this as a very attractive feature for cost-effective implementation of Node B synchronisation in cases, where over-the-air synchronisation is not available.

Attached to this liaison statement are 4 documents describing the two proposals for Node B synchronization over-the-air available up to now as well as a draft version of the technical report.



R1-00-0471.zip



R1-00-74 NodeB Sync.zip



R1-99g42 (NodeB Synchronization).zip



R1-00-0965 TR sync rev2.zip