TSG-RAN meeting #21 RP-030398
Frankfurt, Germany, 16 - 19 September 2003

Status Report for SI to TSG

Study Item Name: Analysis of OFDM for UTRAN enhancement

SOURCE: Rapporteur (Sarah Boumendil, Nortel Networks) **TSG:** RAN **WG:** 1

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Ref. to SI sheet: RAN_Study_Items.doc

Progress Report since the last TSG (for all involved WGs):

RAN1 #33:

- Several (20) contributions for the OFDM study have been submitted prior to the meeting, covering a lot of different aspects: OFDM sensitivity to time/frequency synchronisation, OFDM channel estimation, simulation methodology, simulation results, UE impact, UE complexity analysis, etc.
- Text proposals addressing the signalling to be mapped on the OFDM DL to support the HS-DSCH, defining a basic set of OFDM physical channels and addressing the compliance to the UMTS spectral emission mask of OFDM/IOTA have been accepted.
- Questions were raised regarding the need to model different sources of degradation on the DL (Node-B EVM, UE degradation, etc.) and their potential impact on the use of higher-order modulations. An LS has been sent to RAN4 asking for guidance on these issues.
- Contributions presenting performance evaluation for different aspects have been presented and discussed: link-level performance for OFDM with the two sets of parameters and non-ideal channel estimation, link-level and system-level performance with OFDM and WCDMA (Rake and G-Rake). More details and validation results have been requested on the proposed interface between link-level and system-level simulations for OFDM, as well as the associated OFDM CQI.
- 3 contributions addressing the UE impact (processing complexity and RF impact) have been re-submitted from RAN1#32 but not covered during the meeting. One other contribution addressing advanced antenna systems has also submitted but not covered.

List of Completed elements (for complex work items):

- Documentation of OFDM fundamentals
- Sets of reference parameters
- Link and system level simulation assumptions
- OFDM DL signalling analysis for HS-DSCH
- Definition of basic OFDM physical channels to support HS-DSCH

List of open issues:

- Performance evaluation (link/system simulation interface and CQI for OFDM)
- Compatibility and impact evaluation (UE, Node B and UL)
- Inter-cell interference (modelling and analysis) and related frequency re-use aspects
- Handover
- Synchronisation
- Advanced antenna systems

Estimates of the level of completion (when possible):

40%

SI completion date review resulting from the discussion at the working group:

RAN#22 (Dec 03)

References to WG's internal documentation and/or TRs:

[1] R1-030924, TR25.892, Analysis of OFDM for UTRAN enhancement, version 0.3.1.