

RAN WG1 Status Report

Dirk Gerstenberger
RAN WG1 Chairman



RAN WG1 Meetings

➤ RAN1#42bis

October 10 – 14, 2005
San Diego, USA

➤ RAN1#43

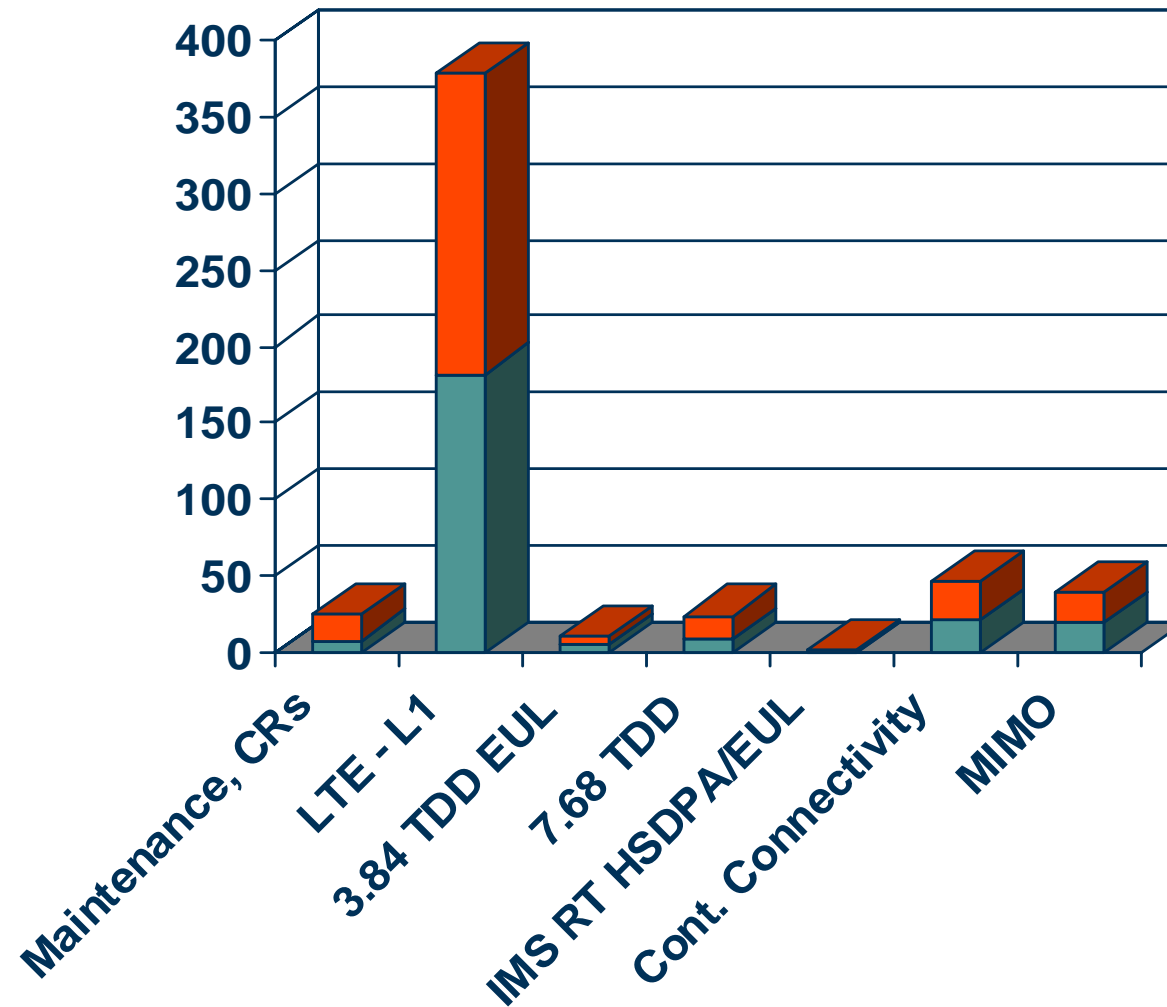
November 7 – 11, 2005
Seoul, Korea

Executive Summary

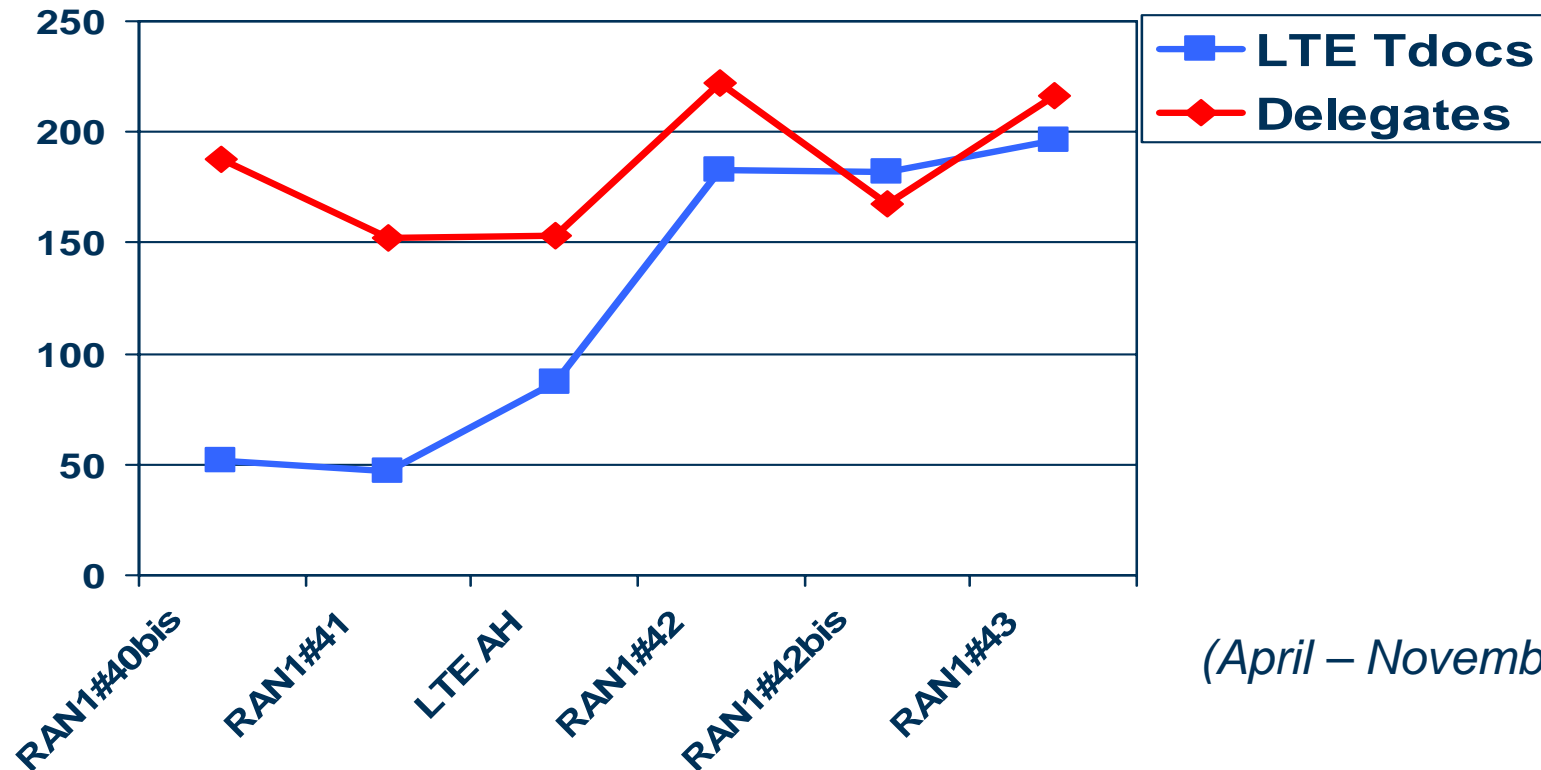
- Maintenance and Rel'7
 - Agreed change requests
 - Rel5: 1 CR (FDD), 1 CR (TDD)
 - Rel6: 5 CR (FDD), 1 CR (TDD)
 - Rel'7 MIMO Work Item – MIMO gain evaluations
 - Simulations done, guidance needed on the way forward
 - Rel'7 Continuous Connectivity
 - TR started, several proposals captured
 - 3.84Mcps TDD Enhanced UL, 7.68Mcps TDD progressing
- Long Term Evolution
 - Work on six multiple access scheme candidates carried out
 - Progress on many details with main focus on OFDMA DL, SC-FDMA UL and also MIMO operation
 - Close to agreement on multiple access scheme for paired & unpaired spectrum (OFDMA DL, SC-FDMA UL)
 - ➔ RAN guidance on the working assumption requested
 - Final simulation results on Macro-Diversity

Contribution Statistics

- RAN1#42bis
- RAN1#43



LTE RAN1 Activities in Numbers



(April – November 2005)

- High industry-wide attention on E-UTRA LTE in RAN1
 - Number of RAN1 participants almost doubled (from around 100)
 - Number of RAN1 LTE contributions stabilizing at a high level
 - ➔ Shows mobile industry commitment to the 3GPP LTE path

Change Requests



Change Requests

- Agreed CRs for Release 5
 - 25.211 (1 CR), 25.224 (1 CR):
 - CSICH clean-up, HS-SCCH power control (TDD)
- Agreed CRs for Release 6
 - 25.211 (2 CRs):
 - N_TPC=1 removal, DPCCH/EDCH combinations
 - 25.212 (3 CRs):
 - E-DCH PLmax alignment, E-DCH SF correction with 4 E-DPDCH, E-DCH 2xSF4 with puncturing
 - 25.223 (1 CR):
 - 16QAM modulation function

Further discussions for Rel'6

- Issues where no conclusion/agreement was reached
 - Iub signalling support for enhanced power control
 - Continue discussion
 - F-DPCH power control modification
 - Continue discussion
 - Reconfiguration with activation time "now"
 - Continue discussion
 - E-DCH HARQ operation in compressed mode
 - No agreement on modification
 - E-DCH Chase combining removal (LS from RAN3)
 - No agreement for removing it, this was indicated in LS to RAN3
 - LCR TDD Enhanced Uplink (CR for 25.804):
 - Inclusion of LCR TDD Enhanced UL study results not concluded yet

Work Items & Study Items



WI/SI where RAN WG1 is the Leading Group

- MIMO in UTRA

- Discussed in parallel sessions at both meetings
- Work on performance evaluation carried out, according to the agreed way forward for evaluation
 - Simulation results for different scenarios (summarized in an LS RP-050759)
 - Two views on how to proceed with MIMO, based on the results:
 - a) Stop the further work on MIMO activities or
 - b) Continue and complete the MIMO WI in timely fashion

➔ RAN guidance needed on the way forward

WI/SI where RAN WG1 is the Leading Group

- Continuous Connectivity for Packet Data Users
 - TR 25.903 was started to cover all aspects of the WI among RAN WGs,
 - 4+1 main technical concepts were described in the TR
 - First analysis results provided for some of the concepts
 - RAN WG2,3,4 kept informed by LS and via TR 25.903
- 7.68Mcps TDD option
 - 9 text proposals for RAN1 TR and Stage 2 TS agreed
 - TR25.809 and TS25.202 presented for information to RAN

WI/SI where RAN WG1 is not the Leading Group

- Improved Support for IMS Realtime Services using HSDPA/HSUPA
 - Simulation results on HS-DSCH cell change performance
 - Proposal for HS-SCCH-less HS-PDSCH operation
- 3.84Mcps TDD Enhanced Uplink
 - 6 text proposals agreed

LTE at RAN1#42bis in San Diego

- ~ 3½ days of discussion on LTE
- 182 contributions submitted, 12 contributions postponed to RAN1#43
- Simulation results carried out to quantify the gains with Uplink Macro-diversity based on the agreed simulation assumptions
 - Finalized simulation results in LS sent to RAN WG2,3 and RAN plenary (RP-050757)
- Proposals for operation in unpaired spectrum were presented and a few basic ideas are agreed to be included in the TR
- Proposals for DL/UL pilot channel scheme were presented and a few basic ideas are agreed to be included in the TR
- Proposals for multiplexing scheme for L1/2 control signals were presented and a few basic ideas are agreed to be included in the TR
- Proposals for chunk bandwidth were presented and noted for further discussion
- RAN1 has discussed on aspects to consider for LTE MIMO and a high-level concept was agreed to be included in the TR

LTE at RAN1#43 in Seoul

- ~ 3½ days of discussion on LTE
- 196 contributions submitted, 50 contributions postponed to LTE AH
- Proposals for random access presented and basic idea is agreed to be included in the TR
- Initial simulation results for OFDM, MC-WCDMA for downlink and SC-FDMA, OFDMA, MC-WCDMA for uplink were presented and included in the TR
- Proposal for some Layer 1 procedures were presented and noted for further discussion.
- Several aspects of MC-WCDMA and text proposals were presented and included in the TR
- Updated RAN1 TR 25.814 v0.5.0 can be found in RP-050729

LTE at RAN1#43 in Seoul

- RAN1 discussed the way forward on MA scheme selection for LTE:
 - Strong desire from the clear majority of the meeting for the same MA scheme for paired and unpaired spectrum operation as also indicated by the requirements in 25.913
 - The concepts fulfilling the above requirement are
 - SC-FDMA UL, OFDM DL proposed by 23 companies
 - Proposal based on MC-(W)CDMA supported by a small number of companies
 - Other proposal (OFDM UL TDD, OFDM DL TDD, SC-FDMA UL FDD) with different MA scheme for paired and unpaired spectrum operation are objected by a big majority of the meeting
- ➔ RAN guidance requested on the working assumption for LTE multiple access scheme (see the text proposal for TR 25.912 in the LS (RP-050758))

RAN WG1 Meeting Schedule 2006 (Tentative)

Meeting	Date	Location	Host
LTE AH	23-25 January 2006	Helsinki, Finland	Nokia
RAN1#44	13-17 February 2006	Denver, USA	North Am. Friends
RAN #31	08-10 March 2006	Hainan, China	
RAN1#44bis	27-31 March 2006	TBD, EU	European Friends
RAN1#45	08-12 May 2006	TBD, China	Datang
RAN #32	31 May - 02 June 2006	Warsaw, Poland	European Friends
RAN1#46	28 Aug – 01 Sept 2006	Tallinn, Estonia	European Friends
RAN #33	20-22 Sept 2006	TBD	
RAN1#47	06-10 November 2006	Riga, Latvia (TBC)	European Friends
RAN #34	29 Nov – 01 Dec 2006	Budapest, Hungary	European Friends



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