

Agenda item 3  
Title: Draft Report of 3GPP TSG RAN WG1 #51 v1.0.0  
(Jeju, South Korea, 5 – 9 November, 2007)  
Document for: Approval  
Source: MCC Support

---



**Fact Summary**

**Meeting:** 3GPP TSG RAN WG1 #51  
**Dates:** 5<sup>th</sup> through 9<sup>th</sup> November, 2007  
**Venue:** The Shilla Jeju Hotel, Jeju, KOREA  
**Host:** Samsung Electronics  
**Attendees:** 171 delegates  
**Documents:** 592 (including some withdrawn and post-meeting artefacts)

Patrick Mérias  
ETSI Mobile Competence Center  
F-06921 Sophia Antipolis Cedex  
Tel: +33 4 92 94 42 06

[Patrick.merias@etsi.org](mailto:Patrick.merias@etsi.org)

# Table of contents

---

Executive summary .....	3
1. Opening of the meeting .....	5
1.1 Call for IPR .....	5
2. Approval of the agenda.....	5
3. Approval of the minutes from previous meeting .....	6
4. Liaison statement handling .....	7
5. Maintenance of R99 - Rel-7 .....	11
6. Evolved UTRA and UTRAN .....	15
6.1 TDD Frame Structure.....	15
6.2 Finalization of TS 36.211.....	17
6.2.1 Downlink reference signals .....	18
6.2.2 Uplink reference signals .....	19
6.2.3 Downlink Control Signalling .....	22
6.2.4 Uplink Control Signalling.....	28
6.2.5 Mapping of virtual resource blocks to physical resource blocks.....	32
6.2.6 Bit Scrambling sequences for UL/DL transmissions.....	36
6.2.7 RACH.....	36
6.3 Finalization of TS 36.212.....	38
6.4 Finalization of TS 36.213.....	40
6.4.1 Timing synchronization .....	40
6.4.2 UL/DL Power Control .....	40
6.4.3 Inter-cell Interference Coordination.....	42
6.4.4 RACH timing and preamble sequence selection .....	43
6.4.5 UE Procedures for downlink shared channel .....	43
6.4.6 UE Procedures for uplink shared channel .....	49
6.5 Finalization of TS 36.214.....	49
6.6 Finalization of TS 36.201.....	50
6.7 UE Categories.....	50
7. Combination of Higher Order Modulation and MIMO in HSDPA (FDD).....	54
8. Enhanced Uplink for Cell_FACH State in FDD .....	54
9. Study Item on Synchronized E-DCH .....	57
10. Study Item on Scope of future HSPA Evolution for 1.28Mcps TDD .....	59
11. Work Item on Enhanced UE DRX.....	59
12. Closing of the meeting .....	60
Annex A: List of participants at RAN1 #51.....	61
Annex B: TSG RAN WG1 meetings in 2008 .....	62
Annex C: List of CRs agreed at RAN1#51 .....	63
Annex D: List of Outgoing LSs from RAN1#51 .....	65
Annex E: List of Tdocs at RAN1 #51 .....	66
Annex F: List of actions .....	67

---

## Executive summary

3GPP TSG WG RAN1 #51 meeting took place in Shilla Jeju Hotel, Jeju, SOUTH KOREA.

The meeting started at 9:10 on Monday 5<sup>th</sup> November and finished at 16:30 on Friday 9<sup>th</sup> November 2007.

The week was scheduled as follows:

- Monday: Common session on AI's 1, 2, 3 and 4 – Parallel session (from the morning coffee break) for AI's 5, 7, 8 and 10 chaired by Dirk Gerstenberger and discussions on 6.4.5 chaired by Juho Lee.
- Tuesday: Parallel session for AI's 6.1 and 6.7 chaired by Dirk Gerstenberger and continuing discussions on 6.4.5 chaired by Juho Lee. Afternoon → Common session on continuing discussions on AI 6.7 –Parallel session (from the coffee break) for AI 6.4.2 and discussions on AI 6.3 chaired by Sadayuki Abeta.
- Wednesday: Common session on AI's 6.4.3, 6.2.3 and 6.2.5. From 8:00PM, parallel session for AI 6.2.7 and continuing discussions on AI 6.2.3 chaired by Stefan Parkvall .
- Thursday: 8:00-9:30AM Parallel session on Synchronized E-DCH (AI 9) and continuing discussions on CQI (6.4.5 chaired by Juho Lee) – Common session on AI's 6.2.4, 6.2.1, 6.2.2 and 6.2.6.
  - 3GPP Farewell beer party from 9:30PM
- Friday: Common session on AI's 6.5, 6.4.1 and 6.4.6. Review of the parallel sessions results on UE procedures for DL shared channel, Channel coding and Downlink Control signalling.

**The list of action points that required RAN1 close follow-up is listed in Annex F (end of document).**

The number of contribution documents for this meeting was 565, and those documents were categorized as followed.

Agenda Item	Input Document	Discussed Document
Liaison statement handling	32	30
Maintenance of R99, Rel4, Rel5, Rel6, Rel7	34	34
Evolved UTRA and UTRAN	466	121
Combination of Higher Order Modulation and MIMO in HSDPA (FDD)	4	4
Enhanced Uplink for Cell_FACH State in FDD	13	13
Other Study Items	16	14

It is noticed that, at meeting start, roughly 10% of the input documents were resubmission of contributions from previous WG meetings.

The following set of documents is missing. The corresponding contributions have not been handed over by companies.

R1-074590	HARQ Process Identity for SU-MIMO	Motorola
R1-074597	Impact of PUSCH Puncturing to Accommodate ACK/NACK	Motorola
R1-074629	Distributed DVRB mapping for EUTRA downlink	Philips

R1-074662	25214CR0475 (Rel-7, F), Alignment of E-TFCI BetaED Switch with RRC signalling	Nokia, Nokia Siemens Networks
R1-074781	ACK/NAK DTX Detection in PUSCH	Samsung
R1-074792	UL time-first mapping	Samsung
R1-074798	Uplink CQI report format	Samsung
R1-074839	DL Idle subframes	Ericsson
R1-074846	Multiple Uplink ACK/NACK transmission in TDD PUCCH	Ericsson
R1-074847	On RACH in narrow bandwidths	Ericsson
R1-074947	Dedicated RS structure for DL beamforming	Qualcomm Europe
R1-074973	Feedback need in support of TDD precoding	Qualcomm Europe
R1-075010	Special Time slot configuration for LTE frame-structure FS2	TD Tech
R1-075093	[Draft] LS on UE capability	Panasonic, NTT DoCoMo

---

# 1. Opening of the meeting

Mr. Dirk Gerstenberger (RAN1 Chairman) welcomed the participants to the 51<sup>st</sup> RAN WG1 meeting and opened the meeting at 09:10.

Dr. Joonyoung Cho from Samsung Electronics welcomed the delegates and informed them about logistic issues during lunch break to avoid as much as possible congestion at the hotel's restaurants. He also announced that Samsung had kindly decided to offer lunch free of charge to 3GPP delegates.

## 1.1 Call for IPR

**The Chairman drew attention to Members' obligations under the 3GPP Partner Organizations' IPR policies. Every Individual Member organization is obliged to declare to the Partner Organization or Organizations of which it is a member any IPR owned by the Individual Member or any other organization which is or is likely to become essential to the work of 3GPP.**

The attention of the members of this Technical Specification Group is drawn to the fact **that 3GPP Individual Members have the obligation** under the IPR Policies of their respective Organizational Partners to **inform their respective Organizational Partners of Essential IPRs they become aware of.**

The members take note that they are hereby invited:

- to investigate in their company whether their company does own IPRs which are, or are likely to become Essential in respect of the work of the Technical Specification Group.
- to notify the Director-General, or the Chairman of their **respective** Organizational Partners, of all potential IPRs that their company may own, by means of the IPR Statement and the Licensing declaration forms (e.g. see the ETSI IPR forms <http://webapp.etsi.org/lpr/>).

---

# 2. Approval of the agenda

R1-074525	Draft Agenda for RAN1#51 meeting	RAN1 Chairman
-----------	----------------------------------	---------------

Dirk Gerstenberger (Chairman) proposed the agenda for the meeting.

**Discussion (Question / Comment):** Mr Chairman noticed no inputs to AI 6.4.4 and 11 and consequently decided to skip them.

**Decision:** The agenda was approved.

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.