3GPP TSG RAN WG1 Meeting #53
Kansas City, USA, 5 – 9 May, 2008

R1-081711

Agenda item	**3**
Title:	**Final Report of 3GPP TSG RAN WG1 #52bis v1.0.0 (Shenzhen, China, 31 march – 4 April, 2008)**
Document for:	**Approval**
Source:	**MCC Support**

Fact Summary

Meeting:	**3GPP TSG RAN WG1 #52bis**
Dates:	**31st March through 4th April, 2008**
Venue:	**Intercontinental Shenzhen, CHINA**
Host:	**ZTE Corporation**
Attendees:	**199 delegates**
Documents:	**542 (including some withdrawn and post-meeting artefacts)**

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Executive summary

3GPP TSG WG RAN1 #52bis meeting took place at Intercontinental Shenzhen, CHINA.

The meeting started at 9:20 on Monday 31st March and finished at 17:30 on Friday 4th April 2008.

The week was scheduled as follows:

- Monday: Common session on Agenda items 1, 2, 3, 4, 6.1, 6.1.1 and 6.1.2.
- Tuesday: Agenda items 6.1.6, 6.3.7, 6.3, 6.3.6 and 6.1.3.
- Wednesday: Agenda items 6.3.4, 6.3.2 and 6.1.4.
- Thursday morning: Main room (España) DVRB (AI 6.1.5), Channel coding (AI 6.2), UE categories (AI 6.5) chaired by Sadayuki Abeta. Breakout room (Madrid 3) HSPA FDD (AI 5) chaired by Dirk Gerstenberger.
- Thursday afternoon: Main room (España) CQI (AI 6.3.5) chaired by Juho Lee. Breakout room (Madrid 3) HSPA FDD (AI 7, 8 and 9) chaired by Dirk Gerstenberger. Breakout room (Madrid 8) Drafting sessions on TBS Table, Downlink RS issues, UL SRS
- Friday morning: Agenda items 6.3.3, and revisions on 4 and 5. Breakout room (Madrid 3) HSPA TDD (AI 10, 11, 12 and 13) chaired by Sadayuki Abeta.
- Friday afternoon: Revisions

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 518, and those documents were categorized as followed.

Agenda Item	Input Document	Discussed Document
Liaison statement handling	34	34
Maintenance of UTRA R99 – Rel8	38	38
Maintenance of Evolved UTRA and UTRAN	386	130
Enhanced Uplink for CELL_FACH State in FDD	17	17
HS-PDSCH serving cell change enhancements	5	5
Study item on Dual-Cell HSDPA Operation	17	17
64QAM for 1.28Mcps TDD HSDPA	4	4
Enhanced CELL_FACH in 1.28Mcps TDD (UL/DL)	7	3
Continuous Connectivity for Packet Data users for 1.28Mcps TDD	5	4
Study Item on Scope of future HSPA Evolution for 1.28Mcps TDD	5	5

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

R1-081238	Timing for Enhanced Uplink in Cell_FACH	Samsung	
R1-081252	PHICH resource allocation in TDD	LG Electronics	
R1-081277	Remaining details on UL DM RS hopping pattern generation	Motorola	
R1-081288	CCE Sizing	Motorola	
R1-081300	Remaining details on Nd=2 DVRB operation	Motorola	
R1-081315	Mapping of precoded WB CQI to non-precoded WB CQI	Motorola	
R1-081319	Disscussion on the inter-cell interference for EUL	HUAWEI	
R1-081333	CCE Size Selection and the Hashing Function	Freescale Semiconductor	
R1-081350	DTX/DRX aspect for 1.28Mcps TDD CPC	TD Tech	
R1-081368	Blind decoding for PDCCH	Texas Instruments	
R1-081397	Details of the Common and UE Specific Search spaces	NEC Group	
R1-081505	Hashing function for starting-point of UE-specific search space	Philips	
R1-081554	PMI bit length for EUTRA TDD	Via Technology	
R1-081627	DVRB To PRB Mapping	ZTE	(R1-081412)
R1-081689	Block-Code for CQI on PUSCH	Marvell	

1. Opening of the meeting

Mr. Dirk Gerstenberger (RAN1 Chairman) welcomed the participants to the 52bis RAN WG1 meeting and opened the meeting at 09:20.

Mr. Zhisong Zuo from ZTE Corporation welcomed the delegates on behalf of the Chineese Friends of 3GPP.

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/Ipr/).

2. Approval of the agenda

R1-081165	Draft Agenda for RAN1#52bis meeting	RAN1 Chairman	

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

Discussion (Question / Comment): Scheduling for HSPA was discussed. Parallel session is foreseen by Thursday to let more time for preparation.
Decision: The agenda was approved.

3. Approval of the minutes from previous meeting

R1-081574	Draft report of RAN1#52 meeting	MCC Support	(R1-081166)

The document was presented by Patrick Mérias.

Discussion (Question / Comment):
Decision: The document is noted and approved.

4. Liaison statement handling

R1-081168	Reply LS on code rate limitations for HS-DSCH UE cat 13 and 15	RAN2, Ericsson	= R2-081311

The document was presented by Johan Bergman from Ericsson. RAN2 agrees to implement the correction in TS 25.306 as proposed by RAN1.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081169	Response LS to RAN5 on HSPA RB and SRB configurations in 34.108	RAN2, Ericsson	= R2-081319

The document was presented by Johan Bergman from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081170	LS on new MCCH radio bearer configuration in 34.108	RAN2, Ericsson	= R2-081320

The document was presented by Johan Bergman from Ericsson. RAN2 has checked and confirmed the correctness of the layer-2 parameters of the new MCCH radio bearer configuration proposed in the CR (section 6.10.2.4.3.9) attached to the LS RAN2 received from RAN5.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081178	LS on UTRAN enhancements for the support of inter-cell interference cancellation	RAN3, Qualcomm	= R3-080548

The document was presented by Sharad Sambhwani from Qualcomm.

Discussion (Question / Comment): NSN mentioned the existence of contributions related to that topic for further discussion.
Decision: Document is noted and Mr Chairman decided to look at them.

R1-081357	Inter-cell Interference Cancellation in CELL_DCH and CELL_FACH	Qualcomm Europe	

The document was presented by Sharad Sambhwani from Qualcomm. The document demonstrates some use-case scenarios where inter-cell interference cancellation (IC-IC) may be beneficial in evolved HSPA networks and proposes one additional message over NBAP/RNSAP to allow the S-RNC to signal to an ICIC-capable NodeB appropriate information on interfering UEs that are served by neighbor NodeBs.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081436	System Performance of ICIC	Qualcomm Europe	

Not treated during Monday's session.

R1-081428	On the benefits of Inter-cell interference cancellation to HSPA networks	Nokia Siemens Networks	

The document was presented by Thomas Chapman from NSN and concludes that further analysis is required of the likely impact on RoT of terminals that have not yet been added to the active set. Also, the RX DPCCH levels typical of such UEs should be analyzed in order to check whether inter-cell interference cancellation is indeed likely to be feasible in such cases.

NSN does not feel that RAN1 can yet reply to RAN3 that signaling to support inter-cell interference cancellation could be beneficial.

Discussion (Question / Comment):

Decision: Document is noted. The topic shall be revisited on Thursday.

Thursday 3rd

R1-081615	System Performance of ICIC	Qualcomm Europe	(R1-081436)

The document was presented by Sharad Sambhwani from Qualcomm and shows simulation results of the system performance of HSPA networks where inter-cell interference cancellation (IC-IC) is enabled.

Discussion (Question / Comment):
Decision: Document is noted. Continue discussion at next meeting.

R1-081167	Reply LS on CSG related mobility (stage 2 text)	GERAN, Nokia Siemens Networks	= GP-080417

The document was presented by Mieszko Chmiel from NSN. In this Liaison Statement, GERAN is requesting more clarifications from RAN2 on:

- Segregation of identities between CSG cells and public E-UTRAN cells
- Support of handover to CSG cells

Discussion (Question / Comment):
Decision: Document is noted.

R1-081171	Reply LS on radio problem detection as part of radio link failure handling	RAN2, Ericsson	= R2-081358

The document was presented by Lars Lindbom from Ericsson

Discussion (Question / Comment):
Decision: Document is noted.

R1-081172	LS on the change rate of physical layer parameters	RAN2, Ericsson	= R2-081362

The document was presented by Erik Dahlman from Ericsson. Actions for RAN1 are:

- RAN2 kindly asks RAN1 to reply to the following question:

What is the anticipated change rate of the aforementioned uplink control parameters ($P_{0,NOMINAL_PUSCH,}$, P_{0,UE_PUSCH}, $P_{0,PUCCH}$) and the PRACH transmit power setting parameter?

- RAN2 would appreciate if RAN1 could, in future updates of the draft L1parameter list to be configured by RRC, indicate which parameters are expected to change often (i.e. change more often than once per hour) and provide the expected frequency of change for those parameters.

Discussion (Question / Comment): PC discussion is foreseen on Thursday's session
Decision: Document is noted. This shall be revisited in connection with PC discussion.

Friday 4th

Update of the parameter list is available (in R1-081645). Erik Dahlman from Ericsson suggested the LS be postponed until next meeting.

R1-081173	LS on various aspects related to GERAN to E-UTRAN interworking	RAN2, Motorola	= R2-081363

The document was presented by Robert Love from Motorola where RAN2 is requesting action from GERAN on the topic of E-UTRA neighbour lists used for mobility from GERAN to E-UTRAN.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081174	LS on PRB usage measurements in reply to R1-080617	RAN2, NTT DoCoMo	= R2-081368

The document was presented by Sadayuki Abeta from NTT DoCoMo

Discussion (Question / Comment): NTT DoCoMo requested clarification where PRB related measurements should be described (RAN1 or RAN2 specifications?)
Decision: Document is noted. RAN1 preferences are to specify these measurements in RAN2 specs.

R1-081175	Reply LS on Signaling of additional spectrum emission requirements	RAN3, Motorola	= R3-080449

The document was presented by Rapeepat Ratasuk from Motorola

Discussion (Question / Comment):
Decision: Document is noted.

R1-081176	LS on RAN performance monitoring	RAN3, NTT DoCoMo	= R3-080530

The document was presented by Sadayuki Abeta from NTT DoCoMo.

Discussion (Question / Comment): Ongoing discussions between RAN3 and SA5
Decision: Document is noted.

R1-081183	LS reply on RAN Performance monitoring	SA5, Nokia Siemens Networks	= S5-080540

The document was presented by Mieszko Chmiel from NSN and is a response LS from SA5 clarifying role when working on performance measurement definitions.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081177	LS on Self Configuring and Self Optimizing Network Use Cases and Solutions TR	RAN3, T-Mobile	= R3-080536

The document was presented by Georg Wannemacher from T-Mobile.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081180	LS on Scale of Reported Measurement Quantities	RAN4, Ericsson	= R4-080484

The document was presented by Ylva Jading from Ericsson

Discussion (Question / Comment): No actions to RAN1
Decision: Document is noted.

R1-081181	Response to LS on switch time requirements for LTE TDD	RAN4, Ericsson	= R4-080535

The document was presented by Lars Lindbom from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081182	LS on signaling Intra/Inter-frequency measurement bandwidth	RAN4, NTT DoCoMo	= R4-080541

The document was presented by Sadayuki Abeta from NTT DoCoMo. As a conclusion, RAN4 asks RAN2 to develop the relevant RRC signaling such that the eNode B can indicate to the UE the channel bandwidth of neighbour E-UTRA cells

that the UE is required to measure in both ACTIVE and IDLE states, such that the UE can accurately make use of a wider measurement bandwidth in these states.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081441	Comments and Simulation Results Related to RAN2 LS on BCCH Transmission (R1-080632)	Nokia Siemens Networks, Nokia	

The document was presented by Mieszko Chmiel from NSN and provides simulation results to evaluate the worst case number of transmissions needed for System Information delivery and proposes the following:

- The worst case number of BCCH transmissions in case of time consecutive and time spares system information transmission
- Time diversity is beneficial from the system information transmission point of view
    - The reception of multiple SUs in parallel, when feasible from the RAN2 point of view, introduces a manageable UE complexity increase comparing to the serial SU reception
    - Furthermore, if retransmissions are confined within an 80 ms window (SU-1's TTI), the latency increase due to time diversity is moderate

Discussion (Question / Comment):
Decision: Document is noted. Mr Chairman decided to look at R1-081206 as proposed by Panasonic.

R1-081206	BCCH on DL-SCH	Panasonic	

The document was presented by Hidetoshi Suzuki from Panasonic and proposes the following:

- The (re)transmissions of SI-1 are in the subframe #5 in every radio frame with an even SFN.
- Both initial transmissions and retransmissions of SIs except SI-1 are done within a single time window.
- A timing restriction is applied for all SIs except SI-1. The number of transmissions (including retransmissions) of SIs except SI-1 is limited to two per 10ms. One is within subframe #0 to #4. The other is within subframe #5 to #9.

Discussion (Question / Comment):
Decision: Document is noted. Mr Chairman asked for off line discussion.

Friday 4th

R1-081607	Draft LS on SI-1 transmission	Ericsson	

The document was presented by Erik Dahlman from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted and LS is agreed in R1-081676

R1-081179	LS on implications of MIMO precoding schemes on RAN4 requirements	RAN4, Nokia	= R4-080426

The document was presented by Asbjörn Grovlen from Nokia and indicates three precoding features which may need to be re-assessed in RAN1.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081247	Draft response to LS on implications of MIMO precoding schemes on RAN4 requirements	LG Electronics, Samsung, ETRI	

The document was presented by (…) from LGE and proposes a reply LS to RAN4 with following conclusion: to keep staying with the current working assumption of both zero/small-delay CDD, as well as the wideband precoding support

Discussion (Question / Comment):
Decision: Document is noted.

R1-081379	Performance of wideband precoding and small delay CDD	Texas Instruments	

The document was presented by (…) from TI and take a look at the performance of small-delay CDD and wideband precoding. In this document, Zero-delay CDD is also used in conjunction with wideband precoding as a reference.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081575	Reconsideration on 2 Tx Codebook for Precoding	NEC Group	(R1-081556)

The document was presented by Ng, Boon loong (…) from NEC and proposes to remove the Identity Matrix from the 2Tx rank-2 codebook as it does not provide any gain over the one without the first entry (as shown by simulation results in Section-2).

Discussion (Question / Comment):
Decision: Document is noted.

R1-081573	Comments on RAN4 LS on MIMO precoding (R1-081179)	Nortel	

The document was presented by Hua Xu from Nortel and as a conclusion, recommends keeping antenna selection for 2-tx system in LTE.

Discussion (Question / Comment): Questions on cross polarized antenna were raised and discussed.
Decision: Document is noted.

R1-081565	Refinement on MIMO Precoding Schemes	Ericsson, Fujitsu, Motorola, NEC, Nokia, Nokia Siemens Networks, NTT DoCoMo, Panasonic, Texas Instruments	(R1-081541)

The document was presented by George Jöngren from Ericsson and is a text proposal to refine MIMO precoding schemes in 36.211.

Discussion (Question / Comment):
Decision: Document is noted.

LGE requested to further present the following contribution:

R1-081262	Further System Level Evaluation of Closed-loop MIMO	LG Electronics	

The document was presented by (…) from LGE and provides an evaluation of two closed-loop combinations under several channel and system scenarios. It concludes as follows:

- Zero-delay CDD mode is appropriate for the wideband precoding in order not to hurt the precoding gain in a high correlation channel.
- Small-delay CDD mode is beneficial for the frequency selective precoding in order to increase multi-user scheduling gain under high loaded cell.
- Timing misalignment across the transmit antennas degrades the performance of wideband precoding significantly, thereby requiring fine tuning of the misalignment for wideband precoding.

Discussion (Question / Comment):
Decision: Document is noted.

As a conclusion of the LS and above set of contributions, proposal is as follow:

- Agree on reduction of codebook as stated in R1-081565, including removing small delay CDD. In addition Identity Matrix for 2 layers closed loop case for 2 TX antennas can be removed.

- Above proposal is supported by Nokia, NSN, NTT DoCoMo, Panasonic, Ericsson, Motorola, Mitsubishi, Qualcomm, NEC, Huawei, TI, Interdigital, Icera, and Fujitsu. In order not to slow down the entire process, both LGE and Samsung finally agree with the proposal.

- Nortel still maintains their objection as they believe antenna selection for 2-tx system in LTE is a feature that should remain in the specs and requested extra time for off line discussion, and further evaluation on the performance impact at the system-level. Nortel argued that, although RAN4 simulation results have shown no performance difference, their link-level simulation results have shown a more significant performance impact in removing the AS codewords.

Friday 4th

R1-081668	Way Forward for Antenna Selection	Nortel, Alcatel-Lucent	

The document was presented by Miss Anna Tee from Nortel and explains Nortel's recommendations in response to the LS from RAN4.

Discussion (Question / Comment): Nortel confirmed they maintain their objection. As Mr Chairman proposed the topic being revisited at next meeting, NTT DoCoMo with others expressed their disagreement for postponing the decision. Vodafone, Vierzon Wireless and Alcatel-Lucent confirmed also their objection to R1-081565.
Decision: Document is noted. As no decision could have been reached, decision shall be taken at next meeting, by vote if no consensus possible.

- Above way forward in R1-081668 is rejected by Ericsson, Nokia, NSN, NTT DoCoMo, Samsung, Panasonic, NEC, Qualcomm, Huawei, Fujitsu and Mitsubishi.

R1-081669	Draft response to LS on implications of MIMO schemes on RAN4 requirements R1-081179 (R4-080426)	Nortel, Alcatel-Lucent, Philips, Vodafone, Verizon, Orange, T-Mobile	

Recently received Incoming LS

Thursday 3rd

R1-081590	LS on RAN2 status on Enhanced uplink for CELL_FACH state in FDD	RAN2, Huawei	= R2-081969

The document was presented by (…) from Huawei.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081643	Reply LS to HS-DPCCH usage with Enhanced Uplink in Cell_FACH	RAN3, Nokia Siemens Networks	= R3-080963

The document was presented by Karri Ranta-aho from NSN.

Discussion (Question / Comment):
Decision: Document is noted.

Friday 4th

R1-081644	LS on Half-Duplex FDD	RAN4, Ericsson	= R3-081644

The document was presented by Ylva Jading from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081647	LS on E-UTRAN Neighbour Cell list information for GERAN	GERAN2, Telecom Italia, Vodafone	= G2-080231

The document was presented by Prakash Bhat from Vodafone.

Discussion (Question / Comment):
Decision: Document is noted.

5. Maintenance of UTRA Release 99 – Release 8

R1-081515	25.212 CR0262 (Rel-8, B) HS-SCCH orders for HS-SCCH-less operation	Ericsson	

The document was presented by Johan Bergman from Ericsson and deals with scenarios where HS-SCCH-less operation is configured in the UE but not needed from a network performance point of view (e.g. in low-load scenarios), the UE power consumption can be reduced if the serving NodeB has a possibility to deactivate (and, if needed, reactivate) HS-SCCH-less operation for the UE. For further description, see R1-080904.

Discussion (Question / Comment):
Decision: Document is noted.

Corresponding CR to 25.214 is in R1-081618

R1-081618	25.214 CR0483r1 (Rel-8, B) HS-SCCH orders for HS-SCCH-less operation	Ericsson	(R1-081516)

The document was presented by Johan Bergman from Ericsson.

Discussion (Question / Comment): NSN expressed their doubt having such technique implemented. Question: is the CR really needed?
As equivalent CRs have been presented in RAN2 with same question mark, RAN2 decision is conditioned to RAN1 agreement.
Another approach to the text could be made (Philips' proposal).
Decision: Document is noted. Discussion should go on and topic will be revisited at next meeting.

R1-081424	25213CR0092 (Rel-7, F) Range of E-DCH amplitude ratios with QPSK	Nokia, Nokia Siemens Networks	
R1-081425	25213CR0093 (Rel-8, A) Range of E-DCH amplitude ratios with QPSK	Nokia, Nokia Siemens Networks	

The documents were presented by Antti Hiltunen from Nokia and clarify how high amplitude ratios UEs not sustaining 16QAM must support.

Discussion (Question / Comment):
Decision: Documents are noted. CRs shall be revised in R1-081628 and are for email approval until Friday 11th April.

R1-081617	25.213 CR0094r1 (Rel-7, F) Restricted Beta Factor Combinations for UL 16QAM	Ericsson	(R1-081514)

The document was presented by Johan Bergman from Ericsson

Discussion (Question / Comment):
Decision: Document is noted. The CR is agreed in principle (wording issue) in R1-081629 and shall be merged with Nokia, NSN CR in R1-081628.

R1-081613	25214CR0481R1 (Rel-7, F) CPC DTX cycle change clarification	Nokia, Nokia Siemens Networks, Alcatel-Lucent	(R1-081426)
R1-081614	25214CR0482R1 (Rel-8, A) CPC DTX cycle change clarification	Nokia, Nokia Siemens Networks, Alcatel-Lucent	(R1-081427)

The document was presented by Antti Hiltunen from Nokia and intends for better description of the Uplink DPCCH burst pattern when the DTX cycle changes during an Uplink DPCCH burst.

Discussion (Question / Comment):
Decision: Document is noted. CRs shall be revised in R1-081630

Friday 4th

R1-081630	CPC DTX cycle change clarification	Nokia, Nokia Siemens Networks, Alcatel-Lucent	(R1-081613) (R1-081614)

Decision: Document is agreed.

R1-081598	25.212 CR0263 (Rel-7, F) Clarification to number of HS-PDSCH codes in HS-SCCH less operations	InterDigital Communications LLC	(R1-081268)
R1-081599	25.212 CR0264 (Rel-8, F) Clarification to number of HS-PDSCH codes in HS-SCCH less operations	InterDigital Communications LLC	(R1-081268)

CR category in Rel-8 shall be A instead of F.

The document was presented by Eldad Zeira from InterDigital and is an attempt making the interpretation of the specs much better, regarding the number of HS-PDSCH used for the first transmission in HS-SCCH less operations that unnecessarily increases the complexity of UE implementation.

Discussion (Question / Comment): CR is identical for both releases
Decision: Document is noted. CRs shall be revised in R1-081631

Friday 4th

R1-081639	Clarification on the number of codes in HS-SCCH less first transmission	InterDigital Communications LLC	(R1-081631)

R1-081631 has been further revised in R1-081639 for typo correction (refer to correct Rel-8 spec version)

Decision: Document R1-081639 is agreed.

R1-081619	EUL coverage enhancements	Ericsson	(R1-081517)

The document was presented by Johan Bergman from Ericsson and discusses possible enhancements in order to provide EUL coverage that approaches the DCH coverage even for 2 ms E-DCH TTI.

Discussion (Question / Comment): Proposed approaches have been commented by several companies. Still not clear which of them are seen as suitable to improve EUL coverage.
Decision: Document is noted. Discussion should continue until next meeting

R1-081439	Optionality of E-DPCCH power boosting	NEC, Fujitsu, Motorola, Panasonic, Sharp	

The document was presented by Pierre Marchand from NEC and raises concerns how features are made optional for REL-7 features.

The specific additional feature questioned here is E-DPCCH power boosting. During the last RAN#39, some companies agreed that the decision to make this feature mandatory was made unconsciously, while other companies thought that this decision was conscious, and this feature was needed for high data rates even non using 16-QAM. Finally it was decided that RAN1 re-discuss this feature and liaise with the other WG's.

Discussion (Question / Comment):
Decision: Document is noted. It is confirmed that E-DPCCH Power Boosting is useful for 16QAM and QPSK, especially for high data rates (including for QPSK case). No agreement to make it generally optional.

Proposal for way forward:

- Link it to high rate UE categories
- Use IOT indication bit (not to be decided by RAN1). This is the preferred way forward from RAN1 perspective.

For the future, it should be kept in mind to refer to the correct WI code in CRs approved in RAN1.

R1-081399	25.222 CR0148 (Rel7, F) Clarification of TRRI on E-AGCH for 1.28Mcps TDD EUL	CATT, TD-Tech, ZTE	

The document was presented by Ke Wang from CATT

Discussion (Question / Comment): Potevio as a guest company has not granted the right to contribute to 3GPP paper. This was already highlighted while allocating Tdoc number by MCC.
Decision: Document is withdrawn and new submission (revision 1) with correct sourcing companies shall be prepared in R1-081632. It shall be revisited by Friday.

Friday 4th

R1-081632	25.222 CR0148R1 (Rel7, F) Clarification of TRRI on E-AGCH for 1.28Mcps TDD EUL	CATT, TD-Tech, ZTE	(R1-081399)

Decision: Document is R1-081632 is agreed.

R1-081400	25.222 CR0149 (Rel7, F) Correction and clarification of some E-HICH coding issues for 1.28 Mcps TDD EUL	CATT, TD-Tech	

The document was presented by Ke Wang from CATT

Discussion (Question / Comment): Potevio as a guest company has not granted the right to contribute to 3GPP paper. This was already highlighted while allocating Tdoc number by MCC.
Decision: Document is withdrawn and new submission (revision 1) with correct sourcing companies shall be prepared in R1-081633. It shall be revisited by Friday.

Friday 4th

R1-081633	25.222 CR0149R1 (Rel7, F) Correction and clarification of some E-HICH coding issues for 1.28 Mcps TDD EUL	CATT, TD-Tech	(R1-081400)

Decision: Document is R1-081633 is agreed.

R1-081336	25.222 CR0147 (Rel-7, F) on E-HICH coding clarification for 1.28Mcps TDD	TD Tech	

The document was presented by Dongdong Shen from TD Tech

Discussion (Question / Comment):
Decision: Document is noted. It shall be revised in R1-081634 and revisited by Friday.

Friday 4th

R1-081634	25.222 CR0147R1 (Rel-7, F) on E-HICH coding clarification for 1.28Mcps TDD	TD Tech	(R1-081336)

Decision: Document is R1-081634 is agreed.

R1-081401	25.224 CR0183 (Rel7, F) Correction of E-PUCH power control for 1.28Mcps TDD EUL	CATT	

The document was presented by Ke Wang from CATT

Discussion (Question / Comment):
Decision: Document is agreed.

R1-081402	25.224 CR0184 (Rel7, F) Clarification of the E-AGCH monitoring for 1.28Mcps TDD EUL	CATT	

The document was presented by Ke Wang from CATT

Discussion (Question / Comment): some editorial changes in title
Decision: Document is noted. Revision in R1-081635 shall be revisited on Friday.

Friday 4th

R1-081635	25.224 CR0184R1 (Rel7, F) Clarification of the E-AGCH monitering for 1.28Mcps TDD EUL	CATT	(R1-081402)

Decision: Document is R1-081635 is agreed.

R1-081334	25.224 CR0174R1 (Rel-7, F) on EUL power control clarification for 1.28Mcps TDD	TD Tech	

The document was presented by Dongdong Shen from TD Tech

Discussion (Question / Comment):
Decision: Document is agreed.

R1-081335	25.224 CR0180 (Rel-7, F) on power offset clarification for 1.28Mcps TDD	TD Tech	

Withdrawn

R1-081337	25.224 CR0181 (Rel-7, F) on E-AGCH/E-HICH joint power control for 1.28Mcps TDD	TD Tech	

The document was presented by Dongdong Shen from TD Tech and proposes that both E-AGCH and E-HICH can be used to carry TPC commands for E-PUCH whether the E-PUCH is scheduled or non-scheduled.

Discussion (Question / Comment):
Decision: Document is noted. Proper wording to be added in R1-081636

Friday 4th

R1-081636	25.224 CR0181R1 (Rel-7, Cat F) on E-AGCH/E-HICH joint power control for 1.28Mcps TDD	TD Tech	(R1-081337)

Decision: Document is R1-081636 is agreed.

R1-081596	25.224 CR0182R1 (Rel-7, F) Use of Special Bursts for DTX on FACH in 1.28 Mcps TDD	Spreadtrum Communications, CATT, RITT, ZTE, TD Tech	(R1-081391)

The document was presented by Miss (…) from Spreadtrum.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-081363	Introduction of 25.321 CR on EUL TBS table change	RITT, TD Tech, CATT, ZTE, Spreadtrum	

The document was presented by Dongdong Shen from TD Tech.

Discussion (Question / Comment): TBS table still require some discussions
Decision: Document is noted. Agree on TBS values in the table over the email reflector until the next meeting. The topic will be revisited at next meeting once proponents have discussed the details and inform RAN2 on the necessary changes.

6. Maintenance of Evolved UTRA and UTRAN

Friday 4th

R1-081660	Information on the isolated impact analysis	Panasonic	

The document was presented by Hidetoshi Suzuki from Panasonic. In order to align with RAN conclusion to have isolated impact analysis (in RP-010494), the document proposes to take such procedure for RAN1 LTE specifications and:

- Encourage to have such analysis but not mandatory until RP#40(June 2008).
- More strict procedure after RP#40 based on the discussion.

Discussion (Question / Comment):
Decision: Document is approved as RAN1 agrees having the same approach.

Conclusion: Isolated impact approach should be applied for CRs in RAN1 from the next meeting onwards.

6.1 Finalization of TS 36.211

R1-081518	Draft CR on Correction of the number of subcarriers in PUSCH transform precoding	Ericsson	

The document was presented by Erik Dahlman from Ericsson

Discussion (Question / Comment):
Decision: Document is noted and content is endorsed assuming revision with CR number being prepared. Revised CR is in R1-081576.

R1-081519	Draft CR on Correction of PHICH mapping	Ericsson	

The document was presented by Erik Dahlman from Ericsson

Discussion (Question / Comment):
Decision: Document is noted and content is endorsed assuming revision with CR number being prepared. Revised CR is in R1-081577.

R1-081520	Draft CR on Correction of PUCCH resource index for PUCCH format 2	Ericsson	

The document was presented by Erik Dahlman from Ericsson

Discussion (Question / Comment):
Decision: Document is noted and content is endorsed assuming revision with CR number being prepared. Revised CR is in R1-081578.

Friday 4th

R1-081576, R1-081577 and R1-081578 are agreed.

6.1.1 Downlink reference signals

R1-081208	Summary of Reflector Discussions on EUTRA DL RS	Samsung	

The document was presented by Aris Papasakellariou from Samsung and provides a summary for the DL RS email reflector discussions on the following topics:

- Dedicated RS (DRS)
  - DRS Pattern for Extended CP

- DRS Interaction with P/S-SCH and P-BCH
- CRS Density Reduction

- Initialization of Pseudo-Random RS Sequences

Discussion (Question / Comment):
Decision: Document is noted.

Friday 4th

R1-081661	Summary of off line discussions on E-UTRA DL RS	Samsung	

The document was presented by Aris Papasakellariou from Samsung and provides results from off line discussions, including:

- DRS pattern in Figure 1 has been agreed for the case of extended CP (R1-081641).
- Modification to the initialization of the pseudorandom RS sequences has been agreed (R1-081620).

Discussion (Question / Comment):
Decision: Document is agreed and CR to the affected specs shall be prepared together with the editor to reflect the decisions.

In addition, LS to RAN4 on point 2.2 (DRS Interaction with P/S-SCH and P-BCH) shall be prepared for email approval until 11/04.

DRS Pattern for Extended CP

R1-081187	Dedicated RS Design for Extended CP	Nortel	

The document was presented by Hua Xu from Nortel and discusses the pros and cons of two DRS patterns that are proposed for extended CP.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081321	DRS Pattern for Extended CP	CATT	

The document was presented by (…) from CATT and addresses the design of DRS pattern for extended CP. The described option 3 (Low frequency density pattern) which has 8 RS symbols in a sub frame seems to be the best choice of DRS pattern for extended CP.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081417	Dedicated RS Pattern for Extended CP	ZTE	

The document was presented by Miss Hui Chen from ZTE and proposes the DRS pattern 2 as defined in the contribution being used for extended CP frame structure.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081338	Dedicated RS design w/o overhead reduction	TD Tech	

The document was presented by (…) from TD Tech.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081442	UE Specific RS pattern for extended CP	Nokia, Nokia Siemens Networks	

The document was presented by Xiangguang Che from Nokia and proposes a total of 8 DRS per Physical Resource Block (PRB) per TTI for extended CP.

Discussion (Question / Comment):
Decision: Document is noted.

Conclusion of the above contributions: 8, 9 or 12 DRS are the choice for extended CP. Mr Chairman requested the different proponents to further discuss off line and come back with a joint proposal (done in R1-081661).

DRS interaction with P/S-SCH and P-BCH

R1-081443	Confliction between UE Specific RS with P/S-SCH and P-BCH	Nokia, Nokia Siemens Networks	

The document was presented by Xiangguang Che from Nokia and discusses issues with respect to the collision between P/S-SCH, P-BCH and the DRS for normal CP. It proposes for both FDD and TDD, to not transmit the DRS in the collided position with P-SCH and P-BCH.

Discussion (Question / Comment):
Decision: Document is noted.

There are 2 proposals:

- The UE can assume that transmissions on antenna port 5 are not done in subframes #0 and #5 in the middle 6 (7) RBs, both for FDD and TDD, or
- RAN4 performance requirements will be defined only for the case where no transmissions are done on antenna port 5 in subframes #0 and #5 in the middle 6 (7) RBs, both for FDD and TDD.

Off line discussion should continue for a joint proposal (done in R1-081661).

Common RS density reduction

R1-081188	Impact of Common Reference Signal Density in BF zone	Nortel	

The document was presented by Hua Xu from Nortel and addresses removing common RS in the data region in the beam-forming region. The paper concludes that the final decision on whether and how to reduce common RS overhead should be made after carefully evaluating the impact on all aspects including channel estimation for control channel, UE measurement, and channel estimation for non-BF UE when BF zone and non-BF zone are multiplexed on same bandwidth.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081572	Overhead Reduction for BF	CATT	(R1-081322)

The document was presented by (…) from CATT and proposes to allow CRS reduction for beam-forming preferred cell. In addition, one potential candidate solution for Part CRS operation mode (mode used for beam-forming preferred cell and part of CRS being reduced) is proposed.

Discussion (Question / Comment):
Decision: Document is noted.

Pseudo-random RS sequence initialization

R1-081248	PRS sequence generation for downlink reference signal	LG Electronics	

The document was presented by Joon Kui Ahn from LGE and discusses problems of downlink reference signal on Peek to Average Power Ratio and cross correlation properties. Proposed solutions are:

- Alternative 1: Typical initial value of shift register of Gold sequence generator and Cyclic shift depending on Cell ID

- Typical MSB initial value of lower shift register is '00111101101100' instead of all zero.
- Cyclic shift depending on Cell ID

- Alternative 2: Fast forward the sequence generator before use
  - Typical number of fast forwarding is '1679' (within range of 0~5000).

Discussion (Question / Comment):
Decision: Document is noted.

R1-081492	Issues with current scrambling sequence generation	Qualcomm Europe	

The document was presented by (…) from (…) and addresses issues/solutions related to the currently assumed LTE randomization schemes, the identified problems being categorized as:

- Insufficient decorrelation of randomization sequences
- Unequal probability distribution for hashing functions

Discussion (Question / Comment):
Decision: Document is noted.

R1-081229	On Gold sequence initialization	Samsung	

The document was presented by (…) from Samsung aiming at the elimination of all cell common bits and randomize inter-cell interference in different subframe/OFDM symbol. The paper proposes an initialization scheme for the scrambling sequence generators.

Discussion (Question / Comment):
Decision: Document is noted.

Conclusion:

Agreement for changing the formula as shown below, the new parameter, N_c, for fast forwarding the sequence generator should be decided after offline checking. Same approach is used for other cases where the pseudo-random sequences are used.

- Sequence generation
  - The reference-signal sequence $r_{l,n_s}(m)$ is defined by

$$r_{l,n_s}(m) = \frac{1}{\sqrt{2}}\left(1-2\cdot c(2m+N_c)\right) + j\frac{1}{\sqrt{2}}\left(1-2\cdot c(2m+1+N_c)\right), \quad m = 0,1,\ldots,2N_{\mathrm{RB}}^{\max,\mathrm{DL}}-1$$

  where n_s is the slot number within a radio frame and l is the OFDM symbol number within the slot. The pseudo-random sequence $c(i)$ is defined in Section 7.2.

Off line discussion should continue for solving the issue with unequal "hashing" probabilities from R1-081492. See section 6.1.7 (remaining issues to 36.211)

Below documents have not been treated during the session.

R1-081476	RS power boosting and interference estimation issues	Qualcomm Europe	
R1-081477	Frequency shift for UE specific RS	Qualcomm Europe	
R1-081503	Remaining issues on UE-specific RS	Philips	

6.1.2 Uplink reference signals

Remaining issues on UL reference signals, e.g.

- Root hopping patterns for UL RS group hopping
- Remaining details on demodulation RS
- Remaining details on SRS

Friday 4th

R1-081662	Summary of off line discussions on E-UTRA UL RS	Samsung	

The document was presented by Aris Papasakellariou from Samsung and provides a summary for the offline discussions and decisions on UL RS.

Discussion (Question / Comment): Mr Chairman asked ad-hoc moderator whether the email discussion summary (R1-081209) was reviewed during the session. Ad-hoc moderator response is: yes, no need for further reviewing
Decision: Document is agreed. Prepare CR(s) with the editor for email approval until 18/04.

R1-081663	LS on UL subframe transmission symbol of sounding reference signals	Samsung	

The LS presented by Aris Papasakellariou from Samsung was agreed, provided the Tdoc number is included in the header (action to MCC)

R1-081673	Draft 36.211 CR on UL DM RS Hopping	Ericsson	

The document was presented by Daniel Larsson from Ericsson

Discussion (Question / Comment):
Decision: Document is noted. CR is for email approval until 11/04.

R1-081472	DL signaling for closed loop antenna selection in LTE UL	Nokia, Nokia Siemens Networks, Ericsson	(R1-080956)

The document was presented by Lars Lindh from Nokia and discusses the DL signaling required for the closed loop antenna selection transmit diversity (CL ASTD) in UL.

Discussion (Question / Comment):
Decision: Document is noted.

Below documents have not been treated during the session.

R1-081201	Sounding RS parameters	Panasonic	(R1-080984)
R1-081210	SRS transmission in UpPTS	Samsung	
R1-081211	SRS indication for TDD	Samsung	
R1-081249	Consideration on UL sounding operation	LG Electronics	
R1-081274	Physical layer parameters to specify for trasmit antenna selection: Summary of remaining UL SRS related issues and way forward	Mitsubishi Electric	
R1-081278	Cyclic Shift values for UL RS	Motorola	

R1-081279	Open Issues on UL Sounding RS	Motorola	
R1-081280	Multiplexing of SRS and PUSCH	Motorola	
R1-081281	Way forward on Indication of UE antenna selection for PUSCH	Motorola, Mitsubishi, Nortel	
R1-081327	Sounding reference signals in UpPTS for TDD	CATT, CMCC, RITT, Ericsson, Huawei	
R1-081332	SRS Bandwidth and Starting Point Signaling	Freescale Semiconductor	
R1-081364	Sounding Reference Signal In Support of Scheduling Request in E-UTRA	Texas Instruments	
R1-081365	UL DM RS Cyclic Shift Values and Hopping Formula	Texas Instruments	
R1-081366	Views on SRS Parameters	Texas Instruments	
R1-081378	Interference between Sounding Reference Signal and PRACH	Texas Instruments	
R1-081394	Proposal of CG sequence hopping in group planning - Resubmission of R1-081025	Huawei	
R1-081405	Sounding RS Parameters in E-UTRA Uplink	NTT DoCoMo	
R1-081444	Cyclic shift value definition for PUSCH demodulation RS	Nokia Siemens Networks, Nokia	
R1-081445	Frequency hopping arrangement for SRS	Nokia Siemens Networks, Nokia	
R1-081446	SRS Bandwidth Selection	Nokia Siemens Networks, Nokia	(R1-080921)
R1-081478	Remaining issues for UL DM-RS hopping	Qualcomm Europe	
R1-081521	Uplink DM RS hopping	Ericsson	

6.1.3 Downlink Control Signaling

Focus on:

- TBS table (for MAC specification)
- Uplink grant signaling for TDD
- PHICH resource mapping/dimensioning for TDD
- Pre-coder indication included in compact grant or in enormous grant or in both?

R1-081522	Summary of email discussions on DL control signaling	Ericsson	

The document was presented by Erik Dahlman from Ericsson and summarizes the outcomes of recent email discussions, including:

- CCE size
- PDCCH contents
- Signaling of PHICH resources on PBCH
- Signaling of TB sizes
- PDCCH blind decoding

Discussion (Question / Comment): Samsung commented their willingness to revisit the assumption "Maintain same payload size for format 0 and 1A"
Decision: Document is noted.

R1-081525	PDCCH contents	Ericsson	

This contribution just summarized the different PDCCH contents for helping the discussion going forward. The document is noted

From the email summary:

CCE size

Proposed way forward:

- Adopt a CCE size of 9 REG irrespective of the system bandwidths
- Combinations of PDCCH formats and CCE aggregation levels with code rates >3/4 are not supported.

PDCCH contents

- **Spatial multiplexing in format 1A**
  - Proposed way forward: Agree on format 1A as in R1-081525, i.e., no MIMO support in 1A.
- **Payload sizes for format 0 and 1A**
  - Same UL/DL bandwidth and Cyclic Shift in format 0
    - Same size for format 0, 1A, 3 and 3A, add 1 bit to format 0, 3 and 3A (resulting in 28 TPC bits for 3 and 3A)
  - Different UL/DL bandwidth
    - In Rel-8: Same size for format 0 and 1A, determined by max(BW_{UL}, BW_{DL})
  - Cyclic Shift in format 0
    - In Rel-8: 3 bits always included (e.g. can be set to predefined value by higher layers)
- **Format 1B**
  - Proposed way forward: Introduce format 1B to support closed-loop single-rank transmission with possibly contiguous resource allocation
    - Based on 1 or 1A with the addition of [2-4] bits for signaling of the precoding index and possibly 1 bit for signaling of codeword indicator
    - Budget of around 40 blind decodes remains unchanged
    - Can be included in Rel-8 if agreements can be made on par with other formats
- **Format 1C**
  - Proposed way forward: Add format 1C for downlink transmission of paging, RACH response and dynamic BCCH scheduling.
    - Included in common search space
    - Always use QPSK on related PDSCH transmission
    - Contents
      - 16bits RNTI implicitly encoded in CRC
      - 3bits MCS

- [5bits] RB assignment
- 2bits RSN

- Consider to add 1 more bit (HARQ process number) for format 1C if this is necessary due to RAN2 decisions on dynamic BCCH scheduling
- Prepare LS in R1-081592 to RAN2 to confirm that this is in line with their ongoing discussion (Ericsson).

R1-081592	Draft LS on information about new PDCCH Format 1C	Ericsson	6.1.3	LS_out	

The document was presented by Erik Dahlman from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted and final LS agreed in R1-081683

- **Dependency on UE category**
  - Proposed way forward: The PDCCH formats do not depend on the category of the UE addressed.
- **Further discussion are needed w.r.t:**
  - MU-MIMO
  - Uplink index for TDD
  - Signaling of precoding information

Signaling of PHICH resources on PBCH

For TDD

R1-081326	Indication of PHICH resource for TDD	CATT, RITT	

The document was presented by (…) from CATT and proposes/compares 4 solutions for solving the "chicken-and-egg" problem for TDD, as listed below:

- Solution 1: Indicate the PHICH configuration of subframe #5 in MIB
- Solution 2: Indicate the DL/UL allocations in MIB
- Solution 3: Fix the PHICH configuration of subframe #5
- Solution 4: Let UE blind detect the PHICH configuration of subframe #5

Paper's conclusion goes in favour of solution 2 from the complexity and performance point of view, and to avoid leading to any impact on the decisions of SU-1 transmission scheme in RAN2.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081454	"Chicken-and-egg" problem of PHICH resource indication in TDD	Nokia, Nokia Siemens Networks	

- The amount of PHICH resources can vary between (DL) subframes and be one of 0, *N* or 2*N*, where *N* is the amount of PHICH resources indicated in the same way as for FDD on the PBCH.
- Once the UL/DL allocation is known, then a table providing the amount of PHICH resources is known in each subframe.
- For offline discussion:
  - If RAN2 agrees to have SIB-1 only in subframes 5

- Do nothing specific to address the problem, and let the UE do additional decoding attempts for SU-1 assuming different TDD configurations (this will in worst case triple the amount of decoding attempts for the SU-1)

- Else
  - RAN2 is kindly asked to include UL/DL allocation in the MIB

Friday 4th

R1-081603	Way forward on UL/DL allocation detection	CATT, CMCC, RITT, Ericsson, Huawei, Motorola, Nokia, Nokia Siemens Networks, Panasonic, Qualcomm, Samsung, ZTE	

The document was presented by (…) from CATT.

Discussion (Question / Comment):
Decision: Document is noted and following conclusion is drawn (due to decision in RAN2 on position of SIB-1):

- No change to current P-BCH/DBCH content, i.e. 3 bits information about TDD UL/DL allocation is transmitted in SI-1.
- Blind detection of PDCCH to decode SI-1 in subframe #5 to solve the chicken-and-egg problem of TDD PHICH.
- To reduce the number of blind decoding attempts, restrict the position of PDCCH for scheduling the SU-1 on the common search space
  - PDCCH for scheduling the SI-1 is allocated to the first CCE set of each aggregation of common search space in subframe #5, (3 or 6 blind decoding attempts in TDD case)

Furthermore, LS (Nokia) to RAN2 shall be prepared to let them informed (for email approval until 11/4).

For FDD and TDD

- The four combinations on PBCH correspond to the number N of PHICH groups as:
  - $$N = \begin{cases} ceil\left[N_h \left(N_{RB}^{DL} / 8 \right) \right] & \text{for normal CP} \\ 2 * ceil\left[N_h \left(N_{RB}^{DL} / 8 \right) \right] & \text{for extended CP} \end{cases}$$
    - N_h is signalled on the PBCH as 1/6, 1/2, 1 or 2

Signaling of Transport Blocks sizes

R1-081195	PDCCH transport block signaling	Panasonic	

The document was presented by Christian Wengerter from Panasonic and provides a proposal for signaling the transport format by means of Transport Block Sizes indices (TBSi) based on a Transport Block Size superset approach similar to HSDPA and additional partitioning.

- Keep the decision to have 5 bits of transport format signaling on the PDCCH
- Signaling of the transport format by means of a Transport Block Size indicator

- Definition of a TBS superset containing all possible TBS values for the maximum system bandwidth (100 RBs). For smaller system bandwidths, subsets of the superset are applicable
- For a given RB allocation size, selected TBSs values (TBS superset indices) of the TBS superset are available for signaling on the PDCCH
- The TBS superset is partitioned in two subsets and, for a given RB allocation size, the available TBS values are selected from a single subset

Discussion (Question / Comment):
Decision: Document is noted.

R1-081284	TBS and MCS Signaling and Tables	Motorola	

The document was presented by Robert Love from Motorola and proposes an MCS table design with 29 MCS per RB allocation and three MCS entries reserved for implicit TBS and modulation signaling, including a procedure for generating a statically defined MCS tables consisting of transport block sizes (TBS) computed for 29 MCSs for each of *j* PRBs where j=1,…, N_{RB}^{DL} is proposed.

Discussion (Question / Comment):
Decision: Document is noted.

- Working assumption: R1-081284 is taken as starting point for the further discussion
  - Can discuss whether to modify (parts of) the table with a formula or rule
- Continue offline discussion and revisit at the end of the week (in R1-081589).

Friday 4th

R1-081589	MCS Table Design- Outcome of offline discussions	Ad-Hoc moderator (Ericsson)	

The document was presented by Thomas Chen from Ericsson and shows the agreement reached on MCS Table design.

Discussion (Question / Comment):
Decision: Document is agreed and LS to RAN2/RAN4 shall be prepared for email approval until 11/04.

PDCCH Blind Decoding

- **Small number of CCEs**
  - Proposed way forward: Search space concept is always used.
- **Overlap between common and UE-specific search space**
  - Proposed way forward: Allow overlap between common and UE-specific search space
- **Common search space**
  - Common search space corresponds to CCEs 0-15 (four decoding candidates on level-4, CCEs 0-3, 4-7, 8-11, 12-15 and two decoding candidates on level-8, CCEs 0-7, 8-15)

R1-081504	Analysis of search space design for PDCCH blind decoding	Philips	

The document was presented by Tim Moulsley from Philips and provides an analysis of the performance of different search space designs for the single-CCE aggregation level in terms of the blocking probability. The document further proposes:

- A fixed non-contiguous pattern of CCEs be defined in the specifications for the aggregation level 1 search space (while retaining the contiguous property for aggregation levels 2, 4 and 8).

- An initial proposal for such a pattern is {i,i+4,i+11,i+13,i+14,i+19}, which works well for all total numbers of CCEs greater than about 31. Further checking is required for smaller total numbers of CCEs.

Discussion (Question / Comment):
Decision: Document is noted.

- Set of CCEs
  - Contiguous means if *s* is the number of the starting CCE (from the hashing algorithm), then the UE monitor CCEs *s* to *s+M*-1, where *M* is the number of CCEs to monitor in the aggregation level
  - In Rel8: Contiguous.

- **Hashing function**

R1-081212	UE-specific search spaces	Samsung	

The document was presented by (…) from Samsung and provides an analysis of the currently agreed hash function and further suggests the use of a modified hash function as:

$$Y = X \bmod m \text{, where } X = \text{circshift}(i_{UE}, q \times i_{SUBFRAME})$$

Discussion (Question / Comment): Nokia indicated that there is a blocking issue that remains unsolved if Search Spaces are selected as they are in the contribution.
Decision: Document is noted.

R1-081289	PDCCH Search Space Assignment Hashing Function	Motorola	R1-081586

The document was presented by Robert Love from Motorola and is a study of the performance of different types of hashing functions mainly from a blocking rate point of view. It is proposed to adopt consecutive CCE aggregations and hashing function 8 (HF8) for better blocking rate performance.

$$S_{HF8} = \bmod(K(UL, DL)' \; UEID, N_{CCE})$$

Discussion (Question / Comment): Simulation results are provided in the revised version of the contribution (R1-081586).
Decision: Document is noted.

Continue discussion offline to agree on a correction for the currently defined hashing function, based on inputs (UE Id, subframe number, N_CCE, aggregation level).

Friday 4th

R1-081675	Way forward on hashing function definition	LGE, Ericsson, Motorola, Qualcomm, Nokia, NSN, Samsung	

The document was presented by (…) from LGE.

Discussion (Question / Comment):
Decision: Document is noted and the proposed way forward is agreed.

Due to long day session, Mr Chairman closed it but requested companies to look at:

UL Scheduling for TDD

R1-081451	General on PDCCH DL/UL grant of TDD	Nokia, Nokia Siemens Networks	
R1-081282	Uplink Grant Signaling for TDD	Motorola	

R1-081324	Multi-TTI Scheduling for LTE TDD UL	CATT	
R1-081450	LTE TDD UL Multi-TTI Scheduling	Nokia, Nokia Siemens Networks	
R1-081523	Uplink grant signaling for TDD	Ericsson	

and encouraged them for off line discussion and possible revisit later this week.

Friday 4th

R1-081670	Way forward for UL HARQ timing and multi TTI scheduling	CMCC, Huawei, Ericsson, Nokia, NSN, CATT, RITT, Motorola, ZTE, Samsung, LGE	

The document was presented by (…) from CMCC.

Discussion (Question / Comment):
Decision: Document is noted and way forward is agreed. CR to capture the agreements is in R1-081677. CR is for email approval until 18/04.

The following set of documents has not been treated.

R1-081190	MCS Table Design for eNB	Nortel	
R1-081204	Control signaling for downlink MU-MIMO	Panasonic	
R1-081213	MCS/TBS indication for DL-SCH and UL-SCH	Samsung	
R1-081214	TBS table design for DL-SCH and UL-SCH	Samsung	
R1-081215	DL PHICH Remapping with UL RB Size	Samsung	
R1-081216	DCI Payload Formats and Contents	Samsung	
R1-081217	Compact UL-SCH Assignment in E-UTRA	Samsung	
R1-081250	Considerations on the design of transport block size table	LG Electronics	
R1-081253	PMI-field compression in PDCCH contents for 4 Tx MIMO	LG Electronics	
R1-081254	Downlink Control Signaling for SU-MIMO	LG Electronics	
R1-081283	Control Signaling for Single-Cell MBMS Transmission	Motorola	
R1-081285	PHICH/UL Grant Resource Assignment and Dimensioning for TDD	Motorola	
R1-081286	PHICH resource signaling for TDD and FDD	Motorola	
R1-081287	Open Issues on PDCCH Formats and Contents	Motorola	
R1-081290	PDCCH Coverage 1248 vs 124 vs 12 with limited PC dynamic range	Motorola	
R1-081367	PDCCH Content and Formats	Texas Instruments	
R1-081369	Supportable MCS for E-UTRA Downlink	Texas Instruments	
R1-081386	Downlink Control Signaling for MU-MIMO	InterDigital Communications LLC	

R1-081387	PDCCH MIMO Format Options for e-UTRA	InterDigital Communications LLC	
R1-081392	SCH design for dedicated MBMS	Huawei	
R1-081393	Control Signaling of MBMS Single-Cell Transmission	Huawei	
R1-081396	Downlink Multiplexing for Persistent and Dynamic scheduling	NEC Group	
R1-081406	Hashing Function Generation for PDCCH Blind Decoding	NTT DoCoMo	
R1-081410	PHICH Resource Mapping in TDD	ZTE	
R1-081416	Signaling of the Precoder for DL MU-MIMO	ZTE, CHTTL	
R1-081422	PHICH Resource Mapping in TDD	ZTE	
R1-081447	PDCCH decoding complexity and associated hashing functions	Nokia, Nokia Siemens Networks	
R1-081448	DCI and CCE size	Nokia, Nokia Siemens Networks	
R1-081449	Associated PDCCH signaling for PCH, RACH response and BCCH transmission on PDSCH	Nokia, Nokia Siemens Networks	
R1-081452	Downlink scheduling for ACK/NACK bundling	Nokia, Nokia Siemens Networks	
R1-081453	PHICH resource mapping and dimensioning for TDD	Nokia, Nokia Siemens Networks	
R1-081479	Remaining issues on PDCCH formats and contents	Qualcomm Europe	
R1-081480	PDCCH format for Paging	Qualcomm Europe	
R1-081481	Remaining issues on PDCCH search space definitions	Qualcomm Europe	
R1-081482	Specification details for PHICH transmission for extended CP and more	Qualcomm Europe	
R1-081483	Conveying MCS and TB size via PDCCH	Qualcomm Europe	
R1-081484	On the need for MCS with code rate > 1 for UL transmissions	Qualcomm Europe	
R1-081485	Control in support of DL MU-MIMO operation	Qualcomm Europe	
R1-081506	PDCCH message information content for persistent scheduling	Philips, NXP	
R1-081507	Distributed Resource Allocation Signaling on PDCCH	Philips, NXP	
R1-081508	Index for PDCCH signaling of UL resource allocation in conjunction with DRX	Philips, NXP	
R1-081509	PDCCH message for paging	Philips, NXP	
R1-081524	PHICH and UL HARQ timing and association for TDD	Ericsson	
R1-081526	On retransmission support for 4-Tx MIMO	Ericsson	
R1-081553	Signaling of MU-MIMO precoding vector	Huawei	
R1-081567	Randomization Function for PDCCH search space	LG Electronics	(R1-081251)

6.1.4 Uplink Control Signaling

Focus on:

- Linkage between PUSCH MCS and amount of resources for control on PUSCH
- Multiple ACK/NACK transmissions on PUCCH/PUSCH for TDD

R1-081527	Summary of email discussions on UL control signaling	Ericsson	

The document was presented by Erik Dahlman from Ericsson and outcomes the recent email discussions on UL control signaling.

Discussion (Question / Comment):
Decision: Document is noted.

From email discussion:

PUCCH ACK/NACK index

- FDD: For dynamic scheduling, the PUCCH format 1 index is given by the index of the first CCE in the PDCCH used to schedule the UE.
- **TDD issues**

R1-081293	PUCCH ACK/NACK Transmission and Index Mapping for TDD	Motorola	

The document was presented by Rapeepat Ratasuk from Motorola and addresses the issue of ACK/NACK timing in the uplink and selection of the PUCCH index for TDD.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081568	Uplink ACK/NACK resource allocation in TDD	LG Electronics	(R1-081257)

The document was presented by Joon Kui Ahn from LGE and suggests methods of uplink ACK/NACK resource allocation related to the CCE index for downlink assignment in E-UTRA TDD mode and proposes to apply the suggested method to E-UTRA FDD mode as well for the efficient utilization of uplink PUCCH resource and the commonality between FDD and TDD modes.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081219	CCE to uplink ACK/NACK mapping in TDD	Samsung	

The document was presented by (…) from Samsung and suggests one uplink sub-frame should carry ACK/NACK for multiple downlink sub-frames in the cases of more downlink sub-frames than uplink sub-frames in EUTRA TDD.

Discussion (Question / Comment):
Decision: Document is noted.

From the 3 above contributions, the proponents are invited to discuss off line and to see whether they could reach kind of agreement.

Control signaling on PUSCH

- **Modulation scheme**
  - Proposed way forward: CQI/PMI on PUSCH uses the same modulation scheme as data on PUSCH.
- **Code rate for control**

No formal contributions were made available for code rate for CQI. Following contributions address the dimensioning of the ACK/NACK resources, but it would be hardly difficult to conclude on CQI resources. Nevertheless, Mr Chairman decided to look at them.

R1-081457	Linkage between PUSCH MCS and amount of resources for ACK/NACK on PUSCH	Nokia Siemens Networks, Nokia	

The document was presented by Timo Lunttila from NSN and discusses linkage between PUSCH MCS and amount of resources for ACK/NACK on PUSCH.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081218	Results for the linkage between PUSCH MCS and ACK/NACK resource amount on PUSCH	Samsung	

The document was presented by Joonyoung Cho from Samsung

Discussion (Question / Comment):
Decision: Document is noted.

Discussion should continue until next meeting for both ACK/NACK and CQI resources

- **Offset**
  - Proposed way forward: Agree on a semi-statically configured offset between the data MCS and the code rate of the control signaling (ACK/NACK and CQI)
  - Next step is to define the offset values. Discuss whether multiple offsets are needed e.g. when multiple services with different QoS are time multiplexed.

- **Persistent scheduling**

R1-081606	Mapping between PDCCH index and UL A/N index for Dynamic A/N Channels	Samsung, Panasonic, TI, Qualcomm, Ericsson	

The document was presented by Charlie Zhang from Samsung and deals with one remaining issue of UL A/N and CQI channelization on PUCCH. It focuses on the mapping of the DL PDCCH index and the UL A/N index for dynamic A/N users.

Discussion (Question / Comment): Nokia, NSN supports the proposal as well and noticed its limitation w.r.t TDD.
Decision: Document is noted and agreed. A CR shall be prepared in R1-081609 to capture the proposal in the specifications. Separate discussion still needed for TDD.

Friday 4th

R1-081609 is not available. CR is for email approval until 18/04.

Wednesday evening session

Multiple ACK/NACK transmissions on PUCCH/PUSCH for TDD

R1-081325	Multiple ACK/NACKs transmission for TDD	CATT	

The document was presented by (…) from CATT and proposes that:

- Multiple classes of ACK/NACKs bundling should be defined, e.g. 1-, 2-, 4-A/Ns for single stream.
- If there is no coverage problem, the scheme with minimum number of bundled ACK/NACKs should be adopted.

In order to simplify the PUCCH for multi-ACKs design and to improve the performance, the paper proposes that:

- The maximum number of ACK/NACKs transmitted in one PUCCH should be limited, e.g. 4.

Discussion (Question / Comment):

Decision: Document is noted.

R1-081292	Uplink ACK/NACK for TDD	Motorola	

The document was presented by Rapeepat Ratasuk from Motorola and proposes that:

- Cell-specific configuration for single or multiple ACK/NACK feedback
- For single ACK/NACK feedback
  - For single-codeword/non-MIMO UEs, bundled ACK/NACK feedback has 1 bit;
  - For MIMO UEs that may use 2 codewords, bundled ACK/NACK feedback has 2 bits. The first (second) bit is the bundled ACK/NACK for the all the first (second) codeword transmissions.
- For multiple ACK/NACK feedback
  - Joint coding is used for multiple ACK/NACK transmission using the same block code as CQI coding agreed in RAN1#51-Bis.
  - PUCCH format 2 (modulated CAZAC sequences) is used to transmit multiple ACK/NACK bits.
  - Use a similar resource region as that of the CQI transmission in PUSCH for multiple ACK/NACK transmission in PUSCH
    - Multiple ACK/NACK resources in PUSCH are placed at the end of the data resources.
  - Normally the multiple ACK/NACK feedback has M x N bits.
  - In the case of M = 9, 9 bits is used for non-MIMO UEs. For MIMO UEs
    - The number of bits may be reduced from 18 to 9 bits with 1 bit for each DL subframe transmission or
    - The number of bits may be reduced to 8 or 10 bits by dividing the DL subframes that can be scheduled for the same UE into two groups: the odd DL subframes and the even DL subframes.
  - For coverage-limited UEs, the multiple ACK/NACK feedback becomes a single/bundled ACK/NACK feedback with only N bits. However, multiple ACK/NACK feedback format is still used in order to avoid having to support both formats in the same subframe. Whether this is needed can be configurable.
    - The coverage-limited UEs could be either configured through higher layer, or implicitly signaled by, for example, using 8 CCEs for PDCCH of the DL scheduling message.

Discussion (Question / Comment): Nokia wondered whether dropping CQI in multiple ACK/NACK could led to a loss of performance. Motorola's answer was that performance shouldn't be affected.
Decision: Document is noted.

R1-081566	Details of ACK/NAK bundling for TDD	Ericsson	(R1-081528)

The document was presented by David Astely from Ericsson and proposes that:

- As a function of the UL:DL asymmetry, each DL subframe is associated with a single UL subframe so that each UL subframe is associated with a set of DL subframes.
- The UE determines the UL PUCCH index based on the lowest CCE index of the PDCCH and the DL subframe number within the set of associated DL subframes of the last received DL assignment in the set.
- For each set of DL subframes, at least the number of DL subframes bundled within the set is exchanged between the eNodeB and the UE
- To consider (at least) the following solutions
  - Signaling on the PDCCH to convey to the UE the in each DL subframe the number of previously DL subframes within the set of associated DL subframes. For 3DL:2UL, one bit is needed whereas 3 bits are needed for the extreme 9DL:1UL configuration.

- CRC scrambling or MAC control signaling on the PDSCH to convey to the UE in each DL subframe the number of previously scheduled DL subframes within the set of associated DL subframes. This will lead to scheduling constraints.
- UL signaling, for example by means of selecting the PUCCH index based on the number of ACK/NACKs bundled. Solutions are needed both for PUCCH and PUSCH for how to handle combinations of ACK/NACK, CQI and scheduling requests.
- Various forms of higher layer signaling with mechanisms similar to persistent scheduling. Such mechanisms need to be defined and agreed and the possible scheduling restrictions need to be understood.

Discussion (Question / Comment):
Decision: Document is noted.

From above set of contributions, it is agreed that for each set of DL subframes, at least information about the number of DL subframes bundled within the set is exchanged between the eNodeB and the UE.

R1-081339	ACK/NACK Multiplexing in PUSCH in TDD	TD Tech	

The document was presented by (…) from TD Tech and proposes a multiple ACK/NACK multiplexing transmission in PUSCH method, which can solve both the UL coverage and DL grant failure problems. The proposed scheme is also aiming to overcome the downlink throughput reduction problem of the ACK/NACK bundling

Discussion (Question / Comment):
Decision: Document is noted.

R1-081486	UL control details for TDD	Qualcomm Europe	

The document was presented by Sandip Sarkar from Qualcomm and proposes that PUCCH Format 1 be used for DFT-SOFDM for good multiplexing capability and uniform operation across all speeds. Recommendations follow:

- Same method as FDD for 1:1 TDD.
- For asymmetric TDD systems with small asymmetry (2:1 of 3:1), use DFT-spread OFDM instead of CAZAC sequences, but employing individual coding for the various ACK/NAKs. Independently encode CQI and the collection of ACK/NAKs when transmitted simultaneously.
- Furthermore, for extreme asymmetry (4:1 or higher), use joint coding of all the control information with DFT-spread OFDM transmission.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081373	Explicit DTX Signaling with ACK/NAK Bundling in TDD	Texas Instruments, Huawei	

The document was presented by (…) from TI and proposes that:

- A 1-bit “TogBit” is included in TDD DL grant when ACK/NAK bundling is applicable;
- UE transmits the bundled ACK/NAK in the UL ACK/NAK channel associated with the last detected DL subframe.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081452	Downlink scheduling for ACK/NACK bundling	Nokia, Nokia Siemens Networks	

The document was presented by Xiangguang Che from Nokia and proposes that:

- Joint ACK/NACK of multiple DL subframes is needed in order to ensure global competitiveness of LTE TDD as TDD system.
- PDCCH reliability is a key concern in specifying ACK/NACK bundling and the specified solution needs to consider this. Some ways have been proposed including lower and higher layer methods to signal (explicitly or implicitly) to the UE how many downlink TTIs are allocated for joint ACK/NACK per DL bundling window.
- The scheduling frame-work with 1 DL grant per DL subframe (e.g. no multi-TTI) should be accepted.
- No changes to the PUCCH design (e.g. the multiplexing/transmission options for ACK/NACK) should be highly prioritized.

Discussion (Question / Comment): The impact on maximum user data rate for the different UL/DL configurations as shown in table 1 has been heavily debated.
Decision: Document is noted.

R1-081256	Handling problem with uplink ACK/NACK bundling	LG Electronics	

Conclusion from the debate: As very detailed description need to be into the LTE specs, Mr. Chairman decided to let the discussion continue off line during the week for further/any improvement or until next meeting (if needed) to see whether CR can be reviewed on Multiple ACK/NACK for further introduction into the specs.

Friday 4th

Continue discussion on bundling and target for a CR at the next meeting.

No agreement that multi-bit ACK/NACK transmission should be supported at this point. This can be re-discussed if agreement is reached offline.

ACK/NACK repetition (FDD)

R1-081529	On ACK/NAK repetition	Ericsson	

The document was presented by Erik Dahlman from Ericsson and discusses the need for ACK/NACK repetition to reach efficient control channel coverage and the objective of a balanced link budget. The paper's conclusion goes in favour of supporting the ACK/NACK repetition.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081291	Repetition of UL ACK/NACK on PUCCH	Motorola	

The document was presented by Rapeepat Ratasuk from Motorola and proposes that there is no need to repeat the ACK/NACK on the PUCCH.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081461	Coverage Comparison between PUSCH, PUCCH and RACH	Nokia Siemens Networks, Nokia, CATT	

Conclusion: Discuss offline which link budget is correct. Decision is expected at next meeting.

R1-081488	Limiting the constellation size of ACK transmissions in PUSCH	Qualcomm Europe	

The document was presented by Juan Montojo from Qualcomm and proposes the following:

- CQI transmission uses the same constellation as for PUSCH transmission
  - The selection of the right coding protection provides the right reliability level for CQI reception
- The ACK/NAK scrambling is performed according to section 2 so that the constellation used for ACK transmission on PUSCH is limited to BPSK (1-bit ACK) or QPSK (2-bit ACK).

No autonomous UE power adjustment based on the control information being multiplexed with the data and hence the increase of code rate for the data transmission.

Discussion (Question / Comment):
Decision: Document is noted. CR shall be prepared to capture the ACK/NACK transmissions in 36.211.

R1-081502	PUCCH format 1 transmission	Qualcomm Europe	

The document was presented by Juan Montojo from Qualcomm and proposes a few ways to improve the DTX detection when both SR and ACK are transmitted in the same subframe. It proposes several ways to improve the ACK DTX detection both for SIMO and MIMO operations.

Discussion (Question / Comment):
Decision: Document is noted. Discussion should continue and CR might be prepared provided reaching an agreement is possible.

Friday 4th

R1-081625	36.211 Draft CR on Limiting the constellation size of ACK transmission when transmitted in PUSCH	Qualcomm Europe	

The document was presented by Juan Montojo from Qualcomm.

Discussion (Question / Comment):
Decision: Document is noted and CR is agreed in R1-081685 (with CR number)

R1-081666	36.211 CR0009 (Rel-8, F) PUCCH format 1	Qualcomm Europe	

The document was presented by Juan Montojo from Qualcomm.

Discussion (Question / Comment):
Decision: Document is noted and CR is for email approval until 11/04.

The following set of documents has not been treated.

R1-081198	Necessity of the scrambling for ACK/NACK on PUCCH	Panasonic	(R1-080978)
R1-081199	Necessity of the scrambling for the reference signal of CQI in PUCCH	Panasonic	(R1-080979)
R1-081200	ACK/NACK repetition and Implicit Resource Allocation for PUCCH	Panasonic	
R1-081220	Multiplexing of Rank and CQI/PMI in PUSCH channel	Samsung	
R1-081221	ACK/NAK DTX Detection in the PUSCH	Samsung	
R1-081222	ACK/NAK Repetitions in E-UTRA UL	Samsung	
R1-081223	Multiplexing Control and Data in the PUSCH	Samsung	
R1-081224	Increasing PUCCH Multiplexing Capacity	Samsung	
R1-081255	Multiplexing of Rank, CQI and Data in PUSCH	LG Electronics	

R1-081258	Efficient Utilization of Unused PUCCH RB	LG Electronics	
R1-081259	Consideration on Punctured PUCCH Format	LG Electronics	
R1-081294	PUCCH CQI Payload Coverage Analysis	Motorola	
R1-081296	Control and Data Multiplexing on PUSCH	Motorola	
R1-081331	Control Region on the PUSCH	Freescale Semiconductor	
R1-081370	Coding of control information on PUSCH	Texas Instruments	
R1-081371	Error protection of CQI reporting	Texas Instruments	
R1-081372	ACK/NAK Repetition in EUTRA Uplink	Texas Instruments	
R1-081374	On Remaining Issues of PUCCH Slot Based CS/OC Remapping	Texas Instruments, Samsung, Panasonic	
R1-081375	Dynamic ACK/NAK Channelization on PUCCH	Texas Instruments	
R1-081376	SRI Resource Configuration on PUCCH	Texas Instruments	
R1-081377	Performance of Scheduling Requests through SRI and PRACH	Texas Instruments	
R1-081407	Necessity of ACK/NACK Repetition	NTT DoCoMo	
R1-081418	Implicit Mapping of AKC/NACK Resources	ZTE	
R1-081419	Modification of Cyclic Shift Hopping for CQI	ZTE	
R1-081455	Multiplexing between Rank and SR	Nokia Siemens Networks, Nokia	
R1-081456	DTX detection in case of simultaneous transmission of SR and ACK/NACK	Nokia Siemens Networks, Nokia	
R1-081458	Avoiding PUSCH error situations caused by DL allocation grant signaling failure	Nokia Siemens Networks, Nokia	(R1-080935)
R1-081460	Channelization of SRI and persistent ACK/NACK on PUCCH	Nokia Siemens Networks, Nokia	
R1-081487	Support of DTX signaling for CQI transmission with normal CP	Qualcomm Europe	
R1-081489	Improved staggering pattern for PUCCH format 1	Qualcomm Europe	
R1-081490	Confirmation of various UL transmission configurations	Qualcomm Europe	
R1-081497	Further details on UL ACK/NAK resource allocation	Qualcomm Europe	
R1-081498	Support of ACK repetition in the UL of E-UTRA	Qualcomm Europe	
R1-081501	Interleaver for PUCCH	Qualcomm Europe	
R1-081547	Power Offsets to Support PUSCH Data and Control Multiplexing	Alcatel-Lucent	
R1-081570	ACK/CQI Joint Encoding on PUCCH with Normal CP	ZTE, CHTTL	(R1-081414)
R1-081585	Simulation comparison between ACK/CQI joint coding and code word puncturing methods on PUCH with Extended CP	ZTE	

6.1.5 Mapping of virtual resource blocks to physical resource blocks

Summary of the status from email discussions on virtual resource block mapping to be prepared by Brian Classon. Focus on:

- Detailed UL-SCH hopping pattern

Friday 4th

R1-081651	Summary of the DVRB ad hoc session	Ad-Hoc moderator (NTT DoCoMo)	

The document was presented by Sadayuki Abeta from NTT DoCoMo

Discussion (Question / Comment):
Decision: Document is noted and content is agreed as follows:

R1-081299	Uplink SCH Hopping email reflector summary	Motorola	

Conclusion from e-mail summary

Pre-determined Hopping Pattern

- n_x=0
- if N_{RB}^{PUCCH} is odd, for the predetermined hopping equations in 36.211 section 5.3.4 $N_{RB}^{PUCCH} = N_{RB}^{PUCCH} + 1$.

Hopping via grant

- For inter-subframe only hopping via grant, the hopping allocation (first slot) will correspond to even retransmission sequence number (RSN), and the hopping allocation (second slot) will correspond to odd RSN.

UL

Pre-determined Hopping pattern

R1-081605	Remaining details on uplink PUSCH hopping	Samsung, LGE, Qualcomm, ZTE	(R1-081225)

Text is endorsed. Change is necessary according to the conclusion of fast forward random generator. Prepare the CR with CR number (in R1-081637)

R1-081678	36.211 CR0007R1 (Rel-8, F) Correction of the predefined hopping pattern for PUSCH	Samsung	(R1-081637) R1-081686

The document was presented by Juho Lee from Samsung.

Discussion (Question / Comment):
Decision: Document is noted and CR is endorsed; Rev 2 with reference instead of specification name is agreed in R1-081686.

Hopping via grant

R1-081411	PUSCH Hopping Resource Allocation Via Grant	ZTE	
R1-081626	Decoder for 36.213 UL hopping resource allocations	Motorola	
R1-081550	UL Hopping Transmission with grant based frequency shift information	Alcatel-Lucent	

Correction

R1-081621	Correction to UE PUSCH Hopping procedure	Samsung	(R1-081226)

Continue the discussion offline. If this correction is really necessary, draft CR to 36.213

DL

R1-081298	Downlink DVRB email reflector summary	Motorola	
R1-081622	Way forward for DVRB	Panasonic, Motorola, LGE, NEC, Nortel, Ericsson	

Way forward supported by Qualcomm. Nokia, NSN, DoCoMo

The following set of documents has not been treated.

R1-081184	Mapping detail for the distributed allocation	Mitsubishi Electric	
R1-081197	Gap and index interleaver design for DVRB mapping	Panasonic	
R1-081260	Downlink DVRB interleaver design	LG Electronics	
R1-081297	Remaining details on Nd=2 DVRB operation	Motorola	
R1-081301	Open issues on UL slot hopping	Motorola	
R1-081398	Remaining issues for DVRB to PRB mapping	NEC Group	
R1-081491	Further details on DL distributed transmissions	Qualcomm Europe	
R1-081623	Explanation of DVRB way forward	Panasonic, LGE, Motorola, Nortel, Ericsson, NEC	
R1-081651	Summary of the DVRB ad hoc session	Ad-Hoc moderator (NTT DoCoMo)	

6.1.6 Remaining issues for TDD and FDD HD

PRACH configurations

R1-081571	Configurations and Location Mapping for TDD PRACH	ZTE, CHTTL, CMCC, Nokia, Nokia Siemens Networks, Huawei, RITT	(R1-081421)

The document was presented by (…) from ZTE and discusses matters on the densities and the number of the versions for TDD PRACH. The paper proposes that the TDD PRACH configuration set in Table 1 and the mapping formulas in section 3.2 are adopted in LTE specification TS 36.211.

Discussion (Question / Comment): Ericsson raised question regarding the high figure (10) used for density per 10ms. Discussion occurred concerning the number of configurations (58) for TDD PRACH.
Decision: Document is noted. Agreement could not be reached on the exact mapping algorithm equations and Mr. Chairman decided to let more time for off line discussion. This topic shall be revisited by the end of the week.

Friday 4th

R1-081674	Way forward on TDD PRACH configurations	ZTE, CATT, CMCC, Ericsson, Motorola, Nokia, Nokia Siemens Networks, Huawei, RITT, Samsung, TD-tech	

Way forward is agreed. CR to capture the agreement in 36.211 shall be prepared.

R1-081340	Frequency hopping for TDD RACH	TD Tech	

The document was presented by (…) from TD Tech and propose that eNB be able to allocate PRACH and P-SCH in different frequency band and different eNBs could adopt varying frequency hopping pattern to mitigate interference from neighbouring cells' P-SCH and PRACH signal.

Discussion (Question / Comment):
Decision: Document is noted.

UL/DL allocations

R1-081303	Remaining DL:UL Allocation for TDD	Motorola	

The document was presented by Rapeepat Ratasuk from Motorola and concludes with a recommendation stating that Bit fields corresponding to the 8th TDD configuration should be specified as reserved for the current LTE release. If an additional configuration has to be added, 5DL:3UL configuration is preferred over 10DL:0UL..

Discussion (Question / Comment): Ericsson expresses their support to the conclusion. Nokia as well does.
Decision: Document is noted.

Conclusion: Remaining 8th allocation is reserved.

R1-081415	Support to Live-Change of Downlink-Uplink Allocation Ratio in LTE TDD	ZTE	

The document was presented by (…) from ZTE and provides the technical solution to adjust D/U allocation ratio in LTE/TDD system, including:

- System cold-restart and user traffic interruption are avoided.
- All allocation ratios in LTE/TDD can be changed from one to another over either time domain or geographical domain.

Discussion (Question / Comment): Support from China Mobile is expressed to go on with the proposed idea.
Decision: Document is noted.

R1-081563	On UL/DL frame timing for TDD	Ericsson	

The document was presented by Lars Lindbom from Ericsson and deals with the support of cells up to 100km for TDD.

The proposal is to introduce a timing advance offset, as in the companion contribution R1-081531, and stay with the agreed maximum timing advance. This timing advance offset shall reflect the time for switching from UL to DL transmission, to be settled by RAN4 but likely around 20μsec (approximately 614T_s).

Discussion (Question / Comment):
Decision: Document is noted. Off line discussion is suggested.

Friday 4th

R1-081679	On timing advance offsets for TDD and HD	Ericsson, Motorola	

The document was presented by Lars Lindbom from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted. LS has been prepared in R1-081680 and content is agreed.

Below two documents have not been formally reviewed during the session.

R1-081227	DVRB to PRB mapping in DwPTS	Samsung	
R1-081531	Start of RA preamble format 4	Ericsson	

6.1.7 Other remaining issues for 36.211

Friday 4th

R1-081665	36.211 CR0008 (Rel-8, F) Non binary hashing functions	Qualcomm Europe	

The document was presented by Juan Montojo from Qualcomm.

Discussion (Question / Comment):
Decision: Document is agreed. MCC shall remove the "draft" annotation.

6.2 Finalization of TS 36.212

R1-081652	Summary of the UE Categories ad hoc session	Ad-Hoc moderator (NTT DoCoMo)	

The document was presented by Sadayuki Abeta from NTT DoCoMo.

Discussion (Question / Comment):
Decision: Document is noted and content is agreed as follows:

Joint coding for extend CP

R1-081264	Performance of ACK/NACK subcode in joint coding on PUCCH for extended CP	LG Electronics	
R1-081459	CQI+Ack/Nack Subcode details	Nokia Siemens Networks, Nokia	

Alternatives:

- removal on subcode: Qualcomm, Ericsson, LGE, Motorola, Broadcomm, Samsung, TI, ETRI
- keep current subcode: Nokia, NSN, ZTE, InterDigital, CHTTL

Conclusions:

- Remove subcode and repetition code from Joint coding structure for extended CP
- Regarding the ACK/NACK position, the fixed ACK/NACK position which is located on last part of bit information
- Prepare CR with CR number to reflect these decisions

Friday 4th

R1-081667	36.212 CR0003 (Rel-8, F) Joint coding for CQI and ACK on PUCCH	Qualcomm Europe	

The document was presented by Juan Montojo from Qualcomm.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-081499	Further details on coding of UL control information	Qualcomm Europe	
R1-081569	ACK/CQI Joint Encoding on PUCCH with Extended CP	ZTE, CHTTL	(R1-081413)

CQI coding on PUSCH

R1-081263	Detail of CQI coding on PUSCH piggybacked from PUCCH	LG Electronics	
R1-081271	Variable-length Block-Code for CQI on PUSCH	Marvell	

Conclusion:

Agree longer codeword length such as 32 bits, 40 bits, continue the discussion offline and/or e-mail reflector on exact coding scheme

Friday 4th

R1-081654	Way forward on Block coding for UL control information	LG Electronics, Ericsson, Broadcom, Motorola, Qualcomm, ETRI, TI, Samsung	

The document was presented by Miss (…) from LGE.

Discussion (Question / Comment):
Decision: Document is noted and the way forward is agreed. It is noted that if there is a need for such code lengths identified, there should be a possibility to propose further optimisations for code lengths between 20 and 32.

Soft Buffer usage

R1-081207	UE soft buffer	Panasonic	

The following set of documents has not been reviewed.

R1-081304	RV for UL Subframe Bundling	Motorola	
R1-081389	Remaining Issue of Soft Buffer Configuration in LBRM for Dual Codeword MIMO	Freescale Semiconductor	
R1-081611	On the bit order & decoding complexity of subset coding	Ericsson	

6.3 Finalization of TS 36.213

R1-081305	36.213 CR0003 (Rel-8, F) Correct PUCCH assignment timing in section 10.1 and document formating	Motorola	

The document was presented by Robert Love from Motorola

Discussion (Question / Comment): As CR has got a number, "Draft" status should not appear and title shall be defined. Nokia highlighted some missing information in Power Control section.
Decision: Document is noted. Corrections are required and CR shall be revised in R1-081583. The revision shall be revisited by the end of the week.

Friday 4th

R1-081583	36.213 CR0003R1 (Rel-8, F) Correct PUCCH assignment timing in section 10.1 and document formating	Motorola	(R1-081305)

Decision: Document is noted and CR is agreed.

R1-081306	36.213 CR0004 (Rel-8, F) Modify DL power control nomenclature to match R1-081134	Motorola	

CR has been withdrawn.

6.3.1 Timing synchronization

Synchronization primitives, Radio link monitoring, inter-cell synchronisation, transmission timing adjustments.

Focus on:

- Criteria for radio problem detection

No contributions

6.3.2 UL/DL Power Control

- Remaining issues on DL power control

R1-081463	Summary of power control email discussion	Nokia Siemens Networks	

The document was presented by Jari Lindholm from NSN and provides a summary of discussion regarding both DL and UL Power Control issues.

Discussion (Question / Comment):
Decision: Document is noted.

Conclusions from email summary:

DOWNLINK

Terminology

- **Proposal:** The terminology as defined in R1-081134 is selected and shall be reflected in 36.213.
    - E_A: EPRE of PDSCH REs type A i.e. REs in the OFDM symbols that do not include reference symbols
    - E_B: EPRE of PDSCH REs type B i.e REs in the OFDM symbols that include reference symbols
    - E_C: EPRE of PDSCH REs type C i.e REs in the OFDM symbols that include ”holes” in the place of reference symbols. This is only applicable in the 4 antenna case.
- The agreement from the last meeting is: $P_A = E_A/E_{RS}$ is signalled semi-statically and UE specifically
- Two other definitions from R1-081134:
    - $P_B = E_B/E_A$ (semi-static and cell specific)
    - $P_C = E_C/E_A$ (semi-static and cell specific)

Signaling of P_A

- Proposal: 3 bits of signaling are used to signal P_A
- Signaled values: [3, 2, 1, 0, -1, -2, -3, -6 dB] to be revisited if RAN4 decides on other values

Is the support of $P_B \neq P_C$ Needed?

- Possibility for $P_B \neq P_C$ was supported by: Ericsson, LGE, Nortel and Samsung
- The view that $P_B = P_C$ always was supported by: Motorola, Nokia, Nokia Siemens Networks, Qualcomm and TI. During the session, Panasonic, NEC, Freescale and Philips expressed their support.
- Conclusion: The support of $P_B \neq P_C$ is not needed, then $P_B = P_C$

Signaling of P_B

- 4 values for P_B
- 1Tx: {a,b,c,d} dB, corresponding to [1/12, 1/6, ¼, 1/3] for RS overhead
- 2 and 4Tx: {e,f,g,h} dB, corresponding to [1/6, 1/3, 3/6, 2/3] for RS overhead
- Values for a,b,c,d,e,f,g,h are included in the LS.

The UE may assume also for 16QAM that EPRE offsets are explicitly signaled and the UE may assume that the offsets applied in the eNB are equal to the signaled ones (for 64QAM this was already agreed), within RAN4 accuracy.

Prepare LS to RAN4 on the agreements above on DL power control.

Friday 4th

R1-081600	Draft LS on information about RAN1decision regarding downlink power settings	Nokia	

The document was presented by Asbjörn Grovlen from Nokia.

Discussion (Question / Comment):
Decision: Document is noted and LS is for email approval until 11/04.

Removal of puncturing option for RS power boosting

- Removal is not agreed at this moment.

R1-081594	PHICH and PDCCH Power Control requirement	Motorola	(R1-081311)

The document was presented by Robert Love from Motorola and proposes the following requirement for 36.213 in section 5.2:

A UE may assume that the EPRE for resource element groups (REGs) of a CCE in the 1st OFDM symbol is offset to the EPRE of its REGs in another OFDM control symbol in the range of 0 to -4 dB.

Discussion (Question / Comment):
Decision: Document is noted. It's decided to include in the LS R1-081600 to RAN4

R1-081593	36.213 CR0005R1 (Rel-8, B) Proposed: intra-CCE REG EPRE requirement	Motorola	(R1-081307)

The document was presented by Robert Love from Motorola.

Discussion (Question / Comment):
Decision: Document is noted. No need for change in RAN1 specifications; ask RAN4 in the LS (in R1-081600) to consider in their work on performance requirements that the UE may assume that the EPRE offset between REGs and different symbols of the same CCE is in the range of 0 to -6 dB.

Friday 4th

R1-081591	Draft LS on information about RAN1 assumptions regarding TPC-PDCCH	Ericsson	

The document was presented by Erik Dahlman from Ericsson and is an LS to RAN2 for further clarification on:

- Following RAN1 #50bis meeting, the "concept" of "TPC-PDCCH$_{PUSCH}$" and "TPC-PDCCH$_{PUSCH}$" (PDCCH with DCI format 3/3a) was agreed and this has then been fully integrated into 36.213. However, it does not seem that this concept has been properly communicated with RAN2, who would be responsible for defining the corresponding "TPC-RNTIs" and the signaling needed to configure a UE with these.

Discussion (Question / Comment):
Decision: Document is noted and the LS is for email approval until 11/04.

UPLINK

PUCCH PC

- Proposal: P0_PUCCH is divided to cell and UE specific part. Default value for UE specific part is 0 dB.

PUSCH PC

- Proposal: Default value for P0_UE_PUSCH is 0dB
- **Delta_MCS (reduced to 1bit)**
  - Proposal: Cell specific bit is removed and default value for UE specific bit is specified so that Delta_MCS is switched off.
- **Accumulation_enabled:**
  - Proposal: Default value of this parameter is that accumulation is used.

Power headroom

- Range and resolution of power headroom report
  - Proposal: The range is [40, -23] dB with 1dB resolution
- Triggering criteria for sending PH report

R1-081464	Triggers for Power Headroom Reports in EUTRAN Uplink	Nokia Siemens Networks, Nokia	

The document was presented by Jari Lindholm from NSN and proposes range and resolution of Power Headroom reports. The paper recommends that negative values of the power headroom are also reported to support power control, adaptive MCS and adaptive transmission bandwidth decisions at the eNode-B.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081535	Trigger criteria for power headroom reporting	Ericsson	

The document was presented by Ylva Jading from Ericsson

Discussion (Question / Comment):
Decision: Document is noted. Continue discussion off line and come back with a joint proposal.

Friday 4th

R1-081604	Way forward for power headroom reporting	Ericsson, Nokia Siemens Network, Nokia, Qualcomm, Panasonic, Alcatel-Lucent	

The document was presented by Ylva Jading from Ericsson

Discussion (Question / Comment):
Decision: Document is noted and the way forward is for email approval until 11/04.

Done: The way forward is agreed in R1-081701 (Referring to Mr. Chairman's email dated April 11th)

R1-081309	Small fixes needed for UL-PC	Motorola	

The document was presented by Amitava Ghosh from Motorola and proposes 2 modifications and fixes for uplink power control in 36.213 with relevant text proposal.

Discussion (Question / Comment):
Decision: Document is noted. This shall be revisited later in the week.

Friday 4th

R1-081612	36.213 Draft CR on SRS Power Control	Motorola, NTT DoCoMo	6.3.2	CR	

The document was presented by Amitava Ghosh from Motorola.

Discussion (Question / Comment):
Decision: Document is noted and CR is agreed in R1-081687.

R1-081533	PUCCH power control for non-unicast information	Ericsson	

The document was presented by Erik Dahlman from Ericsson and proposes to update the text in TS36.213 such that the PUCCH transmission power is adjusted only when a C-RNTI is detected but not when other types of valid RNTIs are detected. Draft CR is in R1-081534

Discussion (Question / Comment):
Decision: Document is noted and agreed in principle. This shall be revisited later in the week.

R1-081534	Draft CR on Correction of PUCCH power control	Ericsson	

Friday 4th

R1-081608	36.213 CR0006 (Rel-8, F) PUCCH power control for non-unicast information	Ericsson	(R1-081534)

The document was presented by Erik Dahlman from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted and CR is for email approval until 11/04.

R1-081233	Transmission Power Control Using DM RS for UL VoIP	Samsung	

The document was presented by Aris Papasakellariou from Samsung and proposes:

The eNB should be able to configure persistently scheduled UEs to transmit a DM RS, prior to their packet transmission, by specifying the cyclic shift, the RB(s), and the sub-frame of this DM RS transmission.

Discussion (Question / Comment):
Decision: Document is noted.

The following set of documents has not been reviewed.

R1-081191	Power Balancing for 4 Tx Antennas	Nortel	
R1-081230	Further discussion on data power setting for PDSCH	Samsung	
R1-081231	Power Scaling and DL RS boosting	Samsung	
R1-081232	RE puncturing pattern for RS boosting	Samsung	
R1-081265	Consideration on Per-antenna Power Scaling for Full Power Transmission in 4Tx Antennas	LG Electronics	
R1-081310	Per Antenna Power Scaling on the PDSCH	Motorola	
R1-081311	PHICH and PDCCH Power Control requirement	Motorola	
R1-081381	Dynamic Range of Downlink Power Setting	Texas Instruments	
R1-081462	DL EPRE Setting	Nokia, Nokia Siemens Networks	
R1-081494	On the signaling of Data/RS power ratio for PDSCH with 16QAM	Qualcomm Europe	
R1-081532	Remaining issues on Downlink RS boosting	Ericsson	
R1-081555	Physical Channel for P_A Signaling	NEC Group	
R1-081588	Analysis on Downlink Power Setting	Texas Instruments	(R1-081380)

6.3.3 Inter-cell Interference Coordination

Focus on:

- *Definition and signaling of Maximum Tx Power per PRB normalized*

R1-081595	Email discussion summary on ICIC	Telecom Italia	

The document was presented by Enrico Buracchini from Telecom Italia and outlines the separate email discussions that were launched on UL and DL ICIC respectively.

Discussion (Question / Comment): Huawei highlighted that they agree with Ericsson's proposal of adding some additional triggers for ICIC report and they also would like to consider optimizing the report content to reduce the overhead. Enrico Buracchini from Telecom Italia apologized for missing Huawei's comment which was sent earlier on email reflector.
Decision: Document is noted.

UL ICIC

- Overload Indication details
    - Way forward: OI generation on the basis of a standardized eNode B measurement of noise + interference
- RSRP measurements reporting triggers
    - Way forward: To introduce an additional trigger for RSRP measurements for ICIC
    - The trigger should in addition to the existing RSRP triggering criteria also take buffer status and valid grant of the UE into account.

- For DL ICIC: If the UE has a DL grant but no UL grant, a timer could be used instead of the UL grant to trigger a report.

- It is foreseen that also the RSRP reports triggered for ICIC purposes should be transmitted by higher layer signalling.
- Details on how to design such a trigger and the reporting would be the responsibility of the RAN2 working group.

R1-081536	Additional RSRP reporting trigger for ICIC	Ericsson	

The document was briefly presented by Ylva Jading from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted. Send to RAN2 on our decision on the additional RSRP trigger for ICIC purpose.

R1-081466	Definition of the uplink overload indicator	Nokia Siemens Networks, Nokia	

The document was presented by Mieszko Chmiel from NSN and recommends

- To introduce an "UL interference" eNode B measurement over N PRBs in TS 36.214. In this context, the UL interference is assumed to also include the thermal noise. (definition based on IoT is considered problematic as this involves measurement of the thermal noise level)
- To derive the OI for a configured sub-band: The "UL interference" eNode B measurement is averaged over a configurable time interval Ta = K T (K is a configurable integer >1). If the averaged eNode B measurement value exceeds a configurable threshold then an OI is signalled via X2.

Discussion (Question / Comment):
Decision: Document is noted. Continue discussion between interested parties and conclusion is expected at next meeting.

R1-081465	Definition of Relative Narrowband TX Power Indicator for DL ICIC	Nokia Siemens Networks, Nokia	

The document was presented by Mieszko Chmiel from NSN and proposes that:

- Only UE-specific PDSCHs are considered in the determination of the RNTP
- The guidelines for the generation of the RNTP presented in section 2 are captured in the relevant specification
- The RNTP threshold can be piggybacked on the RNTP bitmap, the values of the threshold should be aligned with the values of the PDSCH-to-RS EPRE offsets
- The sending eNode B is not mandated to fulfil the promise made by the RNTP bit map
- The actions of the eNode B receiving the RNTP bitmap are not specified

Discussion (Question / Comment):
Decision: Document is noted. Continue discussion until next meeting.

Below set of documents has not been treated.

R1-081242	On overload indicator triggering and reporting format	SHARP	
R1-081275	Combined fixed and adaptive resource allocation method for inter-cell interference coordination	Mitsubishi Electric	
R1-081395	Consideration on identification of interior users/exterior users for ICIC	Huawei	
R1-081423	Handover Region Based Cell Interior/Edge Users Classification Method for ICIC Applications	CHTTL, ITRI	

R1-081537	Further considerations on the use of inter-cell interference indication	Ericsson	
R1-081548	Semi-Static Interference Coordination Method	Alcatel-Lucent	
R1-081549	Support for Semi-Static Inter cell Interference Coordination	Alcatel-Lucent, Nortel Networks	
R1-081551	eNodeB Indicator definition for "Maximum Tx Power per PRB normalized"	Alcatel-Lucent	
R1-081552	X2-signalling of eNodeB Max Tx Power per PRB report	Alcatel-Lucent	

6.3.4 RACH timing and preamble sequence selection

R1-081276	RACH email reflector summary	Motorola	

The document was presented by Amitava Ghosh from Motorola and summarizes the outcomes of email discussions, focusing on:

1. *Minimum UE processing delay of Case 2 for TDD. Can we agree on the proposed 3ms?*
2. *Are there other DL-SCH transmissions to the UE after Message 1 transmission to Message 3 transmission?*
3. *What is maximum size of Message 3 as UE requirement?*
4. *What is UE preamble transmission timing relative to DL?*
5. *Clarification on the root Zadoff-Chu sequence order Table 5.7.2-4 in 36.211.*
6. *What is the delay of message 4 reception to PUCCH Ack/Nack transmission, which includes UE id check procedure in addition to normal DL-SCH reception?*
7. *What is retransmission timing of message 3?*
8. *What is the selection method of PHICH corresponding to message 3?*
9. *Optimizing the PRACH timing relation listed in Table 5.7.1-2 in 36.211.*

Discussion (Question / Comment):
Decision: Document is noted.

From the email summary:

Minimum UE processing delay of Case 2 for TDD

- It was agreed to have the same processing time as for FDD (4 ms).

Are there other DL-SCH transmissions to the UE after Message 1 transmission to Message 3 transmission? One possibility expressed is when RRC-connected UE uses RACH to initiate scheduling request transmission; it may receive downlink data transmission or scheduling grant doing this process. In this case, what should the UE do?

- This is considered as an error case from the eNB, i.e. UE is not expected to receive the downlink transmission.

Maximum size of Message 3

- Although companies do not need to see this specified, defining a maximum size would reduce the test effort. One proposal is ~300 bits. This is left to RAN2.

What is UE preamble transmission timing relative to DL?

It was pointed out that this issue has already been discussed and a decision taken. UE starts preamble transmission from the beginning of UL subframe timing (relative to the estimated DL subframe timing).

Clarification on the root Zadoff-Chu sequence order Table 5.7.2-4 in 36.211.

- No agreement to add clarification on maximum N_{CS} value of restricted set supported by each group of Root Zadoff-Chu sequence order Table 5.7.2-4.

What is the delay of message 4 reception to PUCCH Ack/Nack transmission, which includes UE id check procedure in addition to normal DL-SCH reception?

- Same value as for normal DL-SCH [R1-081205]

What is retransmission timing of message 3?

- Same value as for normal UL-SCH. [R1-081205]

What is the selection method of PHICH corresponding to message 3?

- Same method as for normal UL-SCH. [R1-081205]

Optimizing the PRACH timing relation

R1-081420	Improvement of Random Access Preamble Timing for FDD	ZTE	

The document was presented by (…) from ZTE and suggests the PRACH slot configuration 6 be modified from (1, 6) to (0, 5) to distribute the processing load of the eNodeB more efficiently for density 2 PRACHs/10ms. Proposal is to replace Table 5.7.1-2 in 36.211 by Table 1 as shown in R1-081420.

Discussion (Question / Comment):
Decision: Document is noted. It is proposed to change configuration 6 from (1,6) ->(0, 5) - [R1-081420]. This shall be revisited on Friday.

Friday 4th

Withdrawn

R1-081205	Miscellaneous items on RACH	Panasonic	

Document is noted.

R1-081246	Text Proposal on sequence ordering table of PRACH	LG Electronics	

Document is noted.

6.3.5 UE Procedures for downlink shared channel

Remaining details on UE Procedures for CQI reporting and extension to MIMO feedback reporting.

Focus on:

- CQI estimation methodology
- Definition of configured set of CQI reporting subbands
- Relation of CQI to PMI and Rank

Friday 4th

R1-081664	Summary of the Downlink Procedure	Ad Hoc moderator (Samsung)	

The document was presented by Juho Lee from Samsung and shows the outcomes/decisions made in the ad-hoc parallel session.

Discussion (Question / Comment):
Decision: Document is noted.

From the summary:

R1-081234	Summary of email discussion on CQI reporting	Samsung	

CQI estimation methodology

R1-081467	CQI estimation methodology	Nokia Siemens Networks, Nokia	
R1-081539	UE Interference Measurement for CQI	Ericsson	

Identified approaches

- Approach A:
  - Define the reference period for CQI (already done in 36.213)
- Approach B:
  - Specify reference periods for signal and interference estimation separately
    - The reference period for the signal part in frequency domain:
      - given by the CQI reporting scheme.
    - The reference period for the interference part in frequency domain to be defined.
      - The reference period doesn't mandate a certain UE implementation for the interference measurement.
      - Continue discussion on the exact reference period. Following alternatives are identified.
        - Alt1: whole system bandwidth
        - Alt2: set S
        - Other alternatives are not yet precluded.

Further discussion points about UE behaviour for CQI measurement:

- What should be captured in RAN1 specs?
- What should be captured in RAN4 specs?

Conclusion:

- Continue discussion in RAN1
- Send LS to RAN4 capturing the approaches A and B and further discussion points.

Friday 4th

R1-081659	Draft LS on CQI reference period	Panasonic	

The document was presented by Hidetoshi Suzuki from Panasonic.

Discussion (Question / Comment):
Decision: Document is noted and LS is agreed in R1-081688.

L1 parameters related to CQI reporting

R1-081245	Further clarification fot the periodic reporting on PUSCH	SHARP	
R1-081624	Remaining Issues on CQI/PMI/RI Reporting	Texas Instruments	(R1-081382)

Conclusion: Continue offline discussion to provide a table e.g. as proposed in R1-081624. Check the status on Friday.

Friday 4th

Continue discussion on a proposal for email approval until 11/4.

Done: Physical Layer Parameters for CQI reporting agreed in R1-081693 (Referring to Mr. Chairman's email dated April 11th)

Further refinement on MIMO

R1-081266	Further Consideration on 2Tx Open-loop SM	LG Electronics	

Conclusion: LGE to prepare a CR for 36.213 stating the use of precoder index 0 for 2 TX open loop MIMO operations.

Friday 4th

R1-081657	36.213 CR0011 (Rel-8, F)	LGE	

The document was presented by (…) from LGE.

Discussion (Question / Comment):
Decision: Document is agreed.

Further refinement on CQI

R1-081500	Clarifications on UE selected CQI reports	Qualcomm Europe	

Conclusion: Agreed in principle. Wording to be revised. Prepare a CR for Friday.

R1-081538	Frequency-Selective CQI Reporting on PUCCH	Ericsson	

Friday 4th

R1-081658	36.213 CR0012 (Rel-8, C) Clarifications on UE selected CQI reports	Qualcomm Europe	

The document was presented by (…) from Qualcomm.

Discussion (Question / Comment):
Decision: Document is agreed.

Conclusions concerning the reduction of CQI reporting options.

- Remove periodic CQI report on PUSCH
    - Note: objection from one company was noted but the decision was agreed.

  - It can be discussed at the next meeting whether this decision should be reverted or corrected.

- Remove mode 2-1 and 3-2 for aperiodic CQI report on PUSCH
- Continue discussion in the next meeting for further reduction of the number of CQI reporting options.
  - Interested companies are encouraged to
    - provide their simulation assumptions in two weeks after R1#52bis meeting
    - provide simulation results for comparison of different options.

Detailed discussions are shown below.

Candidates for removal

- Removal of aperiodic CQI report on PUSCH: not agreed
  - Support:
  - Against: NSN, Nokia, Ericsson, TI, Huawei, Icera, LGE, Sharp, NEC, ALU, Nextwave,
- Removal of periodic CQI report on PUSCH: agreed
  - Support: Motorola, TI, LGE, InterDigital (assuming the periodic PUCCH not removed), Samsung, Panasonic, NEC, NTT DoCoMo, NSN, Nokia, Ericsson
  - Against: Sharp, Mitsubishi, Freescale,
- Removal of periodic frequency-selective CQI report on PUCCH: not agreed
  - Support: Ericsson, Sharp, LGE, NSN, Nokia,
  - Against: Qualcomm, Motorola, Freescale, Samsung, NTT DoCoMo, InterDigital, ALU, Panasonic, Icera, Marvel

Aperiodic CQI report on PUSCH

Table 7.2.1-1: CQI and PMI Feedback Types for PUSCH reporting Modes

		PMI Feedback Type		
		No PMI	**Single PMI**	**Multiple PMI**
PUSCH CQI Feedback Type	**Wideband (wideband CQI)**			Mode 1-2
	UE Selected (subband CQI)	Mode 2-0		Mode 2-2
	Higher Layer-configured (subband CQI)	Mode 3-0	Mode 3-1	

For support of Node B with single TX antenna, Mode 2-0 and Mode 3-0 should be kept.

- Removal of Mode 1-2:
  - Support: Sharp
  - Against: TI, LGE, Icera, Ericsson
- Removal of Mode 2-0:
  - Support: Samsung, Panasonic, InterDigital, Philips, Freescale, NTT DoCoMo, Sharp
  - Against: NSN, Nokia,
- Removal of Mode 2-1: agreed.
  - Support: Sharp, Freescale, InterDigital, LGE, Motorola, Huawei (6)
  - Against: Ericsson, NSN, Nokia (3)
- Removal of Mode 2-2:
  - Support: Sharp, NSN, Nokia, Ericsson
  - Against: LGE, TI, Icera, InterDigital, ALU, Freescale, Nortel, Mitsubishi, Huawei
- Removal of Mode 3-0:
  - Support:
  - Against:
- Removal of Mode 3-1:
  - Support: Sharp, InterDigital, Samsung, Philips, Freescale
  - Against: Ericsson, NSN, Nokia, TI,
- Removal of Mode 3-2: agreed
  - Support: Motorola, Panasonic, Ericsson, NSN, Nokia, NTT DoCoMo, TI, LGE, Philips (9)
  - Against: Icera, Freescale, Sharp, Samsung (4)

On PUCCH

Table 7.2.2-1: CQI and PMI Feedback Types for PUCCH reporting Modes

		PMI Feedback Type	
		No PMI	**Single PMI**
PUCCH CQI Feedback Type	**Wideband (wideband CQI)**	Mode 1-0	Mode 1-1
	UE Selected (subband CQI)	Mode 2-0	Mode 2-1

- Removal of Mode 1-0:
  - Support:
  - Against: everyone
- Removal of Mode 1-1:
  - Support:
  - Against: everyone
- Removal of Mode 2-0:
  - Support: Sharp, Ericsson, NSN, Nokia,
  - Against: Motorola, Freescale, InterDigital, ALU, NTT DoCoMo, Qualcomm, Icera, Samsung
- Removal of Mode 2-1:
  - Support: Sharp, Ericsson, NSN, Nokia
  - Against: Motorola, Qualcomm, InterDigital, ALU, NTT DoCoMo, Panasonic, Marvel, Icera, Freescale, Samsung

Simulation assumptions for system simulation

- Traffic model: full buffer or realistic traffic model?
- Network load: light (e.g. with FTP traffic) or heavy (e.g. with web browsing)?

The following set of documents has not been treated.

R1-081185	Performance of PMI Compression Schemes for E-UTRA: Results for Rank-1 Precoding	Icera Semiconductor	
R1-081186	Performance of PMI Compression Schemes for E-UTRA: Results for Rank-2 Precoding	Icera Semiconductor	
R1-081192	Further discussion on DL/UL signaling channel supporting rank adaptation for high mobility UE	Nortel	
R1-081193	Differential PMI feedback	Nortel	
R1-081202	Effect of set S on CQI reports	Panasonic	(R1-080986)
R1-081203	RI reporting scheme on periodic wideband PUCCH	Panasonic	
R1-081235	SU-MIMO PMI feedback and Compression	Samsung	
R1-081236	CQI Reporting for MU-MIMO	Samsung	
R1-081237	Relation of Rank report and PUCCH CQI/PMI reports	Samsung	
R1-081243	VoIP Capacity Improvement by CQI Optimization in PUCCH	SHARP	(R1-080763)
R1-081244	PMI Synchronization Issues	SHARP	
R1-081267	CQI Table for 4x2 Open Loop MIMO	Infineon Technologies	
R1-081272	Edge treatment for frequency-selective CQI format on PUSCH	Marvell	
R1-081273	Edge treatment for spatial differential CQI format on PUCCH	Marvell	

R1-081312	Set S for CQI feedback	Motorola	
R1-081313	Timing relationship between RI, WB- and FS-CQI/PMI Reports on PUCCH	Motorola	
R1-081383	CQI Reporting on PUSCH	Texas Instruments	
R1-081390	Remaining Issue for Rank feedback configuration	Freescale Semiconductor	
R1-081408	Investigation on Throughput Performance of MU-MIMO in E-UTRA Downlink	NTT DoCoMo	
R1-081468	Configuration of periodic CQI reporting on PUSCH	Nokia Siemens Networks, Nokia	
R1-081469	Number of spatially multiplexed users for LTE DL MU-MIMO	Nokia, Nokia Siemens Networks	
R1-081470	Channel Quality Indicator for LTE MU-MIMO	Nokia, Nokia Siemens Networks	
R1-081471	Effect of Precoding Granularity on LTE Multiuser MIMO	Nokia, Nokia Siemens Networks	
R1-081495	Feedback needed in support of TDD precoding	Qualcomm Europe	
R1-081496	Definition of measurement gaps in 36.213	Qualcomm Europe	
R1-081510	Codebook for MU-MIMO	Philips, NXP	
R1-081511	CQI definition for MU-MIMO	Philips, NXP	
R1-081540	Rank Override Support for PMI Confirmation	Ericsson	
R1-081541	On antenna selection and small delay CDD for LTE	Ericsson	R1-081565
R1-081564	A Proposal for Set S	NEC Group	
R1-081659	Draft LS on CQI reference period	Panasonic	R1-081688
R1-081664	Summary of the Downlink Procedure	Ad Hoc moderator (Samsung)	

6.3.6 UE Procedures for uplink shared channel

UE procedures for ACK/NACK detection

R1-081512	UE procedure for ACK/NACK detection	Philips, NXP	

The document was presented by Matthew Baker from Philips and addresses the different cases for the UE behaviour for ACK/NACK detection. It provides a text proposal for the UE procedure to be included in TS36.213.

Discussion (Question / Comment): Philips shall talk to TS36.213 editor and come up with a CR proposal.
Decision: Document is noted. CR shall be prepared in R1-081584 including moving PUCCH part under 8.3 to the appropriate section. CR shall also cover FS2.

R1-081584	36.213 CR0008 (Rel-8, F) UE ACK/NACK procedure	Philips	

The document was presented by Matthew Baker from Philips.

Discussion (Question / Comment):
Decision: Document is agreed.

6.3.7 Remaining issues for TDD and FDD HD

DL HARQ timing

R1-081323	DL HARQ timing for TDD	CATT	

The document was presented by (…) from CATT and proposes to average UL ACK/NAK payloads over available UL subframes, showing an example of UL ACK timing scheme as well.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081473	DL HARQ Timing for TDD(Timing btw PDSCH and UL AckNack)	Nokia, Nokia Siemens Networks	

The document was presented by Xiangguang Che from Nokia and proposes a solution for the timing for the 7 agreed UL/DL configurations.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081542	Uplink ACK/NACK timing for TDD	Ericsson	

The document was presented by David Astely from Ericsson and notices that the UL ACK/NACK timing in TS36.213 is not applicable for LTE TDD since UL transmission is not continuous and proposes:

- The same timing relation is used for ACK/NAK transmission on PUSCH and PUCCH
- The delay between PDSCH reception and ACK/NAK transmission is
  - a function on the subframe number,
  - chosen dependent on the allocation of subframes to UL and DL, and
  - chosen to reduce and balance the maximum number of ACK/NACKs transmitted in an UL subframe.

Discussion (Question / Comment): Nokia acknowledges the proposed Text Proposal and requested extra time for further cross check during the week.
Decision: Document is agreed in principle and a CR in R1-081582 shall be prepared during the week accordingly.

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R1-081582	36.213 CR0009 (Rel-8, F) UL ACK/NACK timing for TDD	Ericsson, CATT, Motorola, Nokia, Nokia Siemens Networks, LGE	

The document was presented by David Astely from Ericsson.

Discussion (Question / Comment):
Decision: Document is agreed.

UL HARQ timing

R1-081328	UL HARQ timing for TDD	CATT	

The document was presented by (…) from CATT and proposes:

- The UL grant should be assigned as close as possible to the UL subframe, independent of the ACK/NACK timing.
- The timing of UL HARQ is subframe-specific, when there are more DL subframes than UL, for some DL subframes, there may be no UL grant or ACK/NACKs.
- The RTT of UL HARQ is multiple of 5ms, which means that the retransmission happens at the same position with the initial transmission.

- The timing definition is independent of multi-TTI scheduling or single TTI scheduling.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081579	TDD Uplink HARQ Timing Design	CMCC, Huawei	(R1-081384)

The document was presented by (…) from CMCC and proposes:

- The overhead of ACK/NACK should be average in all subframes during the same round-trip time;
- Uplink HARQ pattern should be subframe-specific;
- The overhead in special subframe caused by ACK/NACK should be minimized;
- Minimum delay from resource grant signalled to the position where it can be utilized by the UE.

Discussion (Question / Comment): The document header still refers to R1-081384 but it's agreed to consider it as R1-081579.
Decision: Document is noted.

R1-081285	PHICH/UL Grant Resource Assignment and Dimensioning for TDD	Motorola	

The document was presented by Miss Wen Zhou from Motorola and discusses the location and number of DL sub-frames provisioned with PHICH and UL scheduling grant resources for single subframe as well as for multi-subframe allocations for the different UL/DL configurations.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081474	UL HARQ Timing for TDD(Timing btw PUSCH and PHICH/Grant)	Nokia, Nokia Siemens Networks	

The document was presented by f Xiangguang Che rom Nokia and proposes to use the timing structure for UL HARQ as shown in **Error! Reference source not found.** as the general structure for the different TDD configurations and suggests that the amount of PHICH resources reserved for UL HARQ is allowed to change as a function of the TDD UL/DL configuration as well as the subframe number.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081524	PHICH and UL HARQ timing and association for TDD	Ericsson	

The document was presented by David Astely from Ericsson and discusses the timing of PHICH and UL transmissions, as well as configuration of PHICH groups and association of UL PRBs to PHICH resources, for all TDD allocations.

Discussion (Question / Comment):
Decision: Document is noted.

Based from the above set of contributions, it looks like a kind of agreement could be reached. Mr Chairman decided to let proponents discussed off line for the outcome on A/N bundling to be considered.

This topic shall be reviewed by the end of the week.

Has been treated in DL Control Signalling

6.3.8 Other remaining issues for 36.213

NOT TREATED

6.4 Finalization of TS 36.214

NO CONTRIBUTIONS

6.5 Finalization of TS 36.306

Friday 4th

R1-081653	Summary of the UE Categories ad hoc session	Ad-Hoc moderator (NTT DoCoMo)	

The document was presented by Sadayuki Abeta from NTT DoCoMo and provides the outcomes of the ad-hoc parallel session on UE categories.

Discussion (Question / Comment):
Decision: Document is noted.

LBRM for TDD

R1-081316	LBRM for TDD	Motorola	
R1-081329	LBRM for TDD	CATT	
R1-081475	Soft Buffer Allocation	Nokia, Nokia Siemens Networks	

Conclusion:

- Keep current soft buffer size.
- Continue the discussion offline and/or e-mail reflector how to support HARQ process number of 12 and 15
- The candidates are option 2 in R1-081316 and R1-081475

UE capability for DRS in TDD

R1-081388	Way forward on mandatory DRS operation for LTE TDD UE	CMCC, RITT, CATT, Huawei, ZTE, TD-Tech	

Conclusion:

- Keep DRS as optional for FDD
- Continue the discussion offline, revisit Friday

Friday 4th

- DRS mandatory for TDD UE categories, under the assumption that no reduction in CRS will be done
- Prepare LS to RAN2 on the decisions on UE capabilities. For email approval until 11/4.

7 Enhanced Uplink for CELL_FACH State in FDD

Inter-Cell Interference in CELL_FACH

R1-081435	Analysis of Inter-Cell Interference in CELL_FACH	Qualcomm Europe	

The document was presented by Sharad Sambhwani from Qualcomm and provides an analysis of the impact of inter-cell interference in CELL_FACH state due to E-DCH transmissions, based on field log analysis as well as system simulations. It concludes that there is a need to control inter-cell interference at neighbor NodeB cells.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081597	Inter-cell interference with E-DCH in CELL_FACH	InterDigital Communications LLC	(R1-081270)

The document was presented by Eldad Zeira from InterDigital and addresses the same topic as previous contribution. The paper's conclusion states that the use of E-DCH in CELL_FACH creates uncontrolled inter-cell interference due to the absence of soft-handover with its accompanying interference control mechanisms. Imposing a system-wide TBS limit results in an unnecessary average loss of E-DCH in CELL_FACH capacity of up to 20%, depending on the assumed behavioural model. Specific mechanisms need be further investigated.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081543	Enhanced Uplink for Cell_FACH State in FDD	Ericsson	

The document is noted.

AICH/E-AICH

R1-081269	Potential Issues Related to E-AICH Reliability	InterDigital Communications LLC	

The document was presented by Eldad Zeira from InterDigital and proposes to study whether there is an advantage having the UE take steps to reduce the probability of detecting an incorrect E-AI when it deems that detection of E-AI is unreliable.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081353	Performance Targets for AICH/E-AICH based E-DCH Resource Allocation Scheme	Qualcomm Europe	

The document was presented by Sharad Sambhwani from Qualcomm and deals with the impact of AICH/E-AICH detection error on the blocking/collision probabilities of current AICH/E-AICH resource allocation scheme.

The paper concludes that RAN1 should agree on a set of recommended error targets for the AICH/E-AICH based E-DCH Resource Allocation Scheme, as the simulation results show that the impact due to detection error is mainly on the total blocking probability.

Discussion (Question / Comment):
Decision: Document is noted. RAN1 agrees with Qualcomm's recommendation to send LS to RAN4 (Cc RAN2) with the recommended set of error targets for both AICH/E-AICH, and ask RAN2 to include E-AICH power offset. Mr. Chairman requested companies to write down such a proposal for further review in R1-081642.

R1-081320	Default E-DCH resource	NEC Group	

The document was presented by (…) from NEC and discusses the default E-DCH resource addressing method. Proposal is as follows:

- Proposal 1: UE calculates the default E-DCH resource configuration using the formula: DefInd = PreInd mod Y

where DefInd is the default E-DCH resource configuration index, PreInd is the index of an access preamble signature and Y is the total number of E-DCH resource configuration in a cell.

Discussion (Question / Comment): NSN noticed that proposal supposes preamble signatures are ranked in consecutive order.
Decision: Document is noted and proposal 1 is agreed (counting the actually available EDCH resource indices used for EUL Cell FACH in the cell). This shall be reflected in a CR

R1-081354	Efficient utilization of DL HS-resources in CELL_FACH	Qualcomm Europe	

The document was presented by Sharad Sambhwani from Qualcomm and discusses a method that allows for transmission of HS-DPCCH in CELL_FACH state, based on the need to transmit data on the DL, instead of transmitting the HS-DPCCH only when UE sends UL data on the E-DCH.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081429	Draft 25211 CR on AICH/E-AICH	Nokia Siemens Networks, Nokia	

The document was presented by Antti Hiltunen from Nokia.

Discussion (Question / Comment):
Decision: Document is noted as a draft CR and content is endorsed as new baseline.

R1-081430	On L1 synchronisation	Nokia Siemens Networks, Nokia	
R1-081431	Draft 25214 CR on L1 synchronisation and random access procedure	Nokia Siemens Networks, Nokia	

Document R1-081430 was presented by Antti Hiltunen from Nokia and proposes the following:

- The derivative of a synch-procedure A would be used
- The post-verification would be the only option adopted from synch-procedure A for Enhanced UL in CELL_FACH state
- The physical channel establishment criteria as defined today could be used, but the minimum delay for declaring the physical channel establishment as failed could be revisited.
- After the physical channel is established the UE would consider radio link failed if the UE would stop transmitting in the uplink because of the DL quality being too poor.

Discussion (Question / Comment): Nokia indicated that corresponding impact to 25.214 is drafted in R1-081431.
Decision: Document is noted. RAN1 shall check on Friday if this can be agreed as baseline (if so, in R1-081649).

Friday 4th

Draft CR is for email approval until 11/04

R1-081432	Channel timings after acquisition	Nokia Siemens Networks, Nokia, Samsung	

The document was presented by Karri Ranta-aho from NSN and outlines a proposal for defining of the dedicated channels after PRACH/AICH acquisition procedure.

Discussion (Question / Comment):
Decision: Document is noted and content is agreed in principle. Update the draft text for a CR to 25.211 in R1-081648.

Friday 4th

Draft CR is for email approval until 11/04

R1-081239	UE procedure after receiving NACK indication	Samsung	

The document was presented by Miss (…) from Samsung

Discussion (Question / Comment):
Decision: Document is noted.

R1-081513	RACH procedure for E-DCH in Cell_FACH	Philips	

The document was presented by Matthew Baker from Philips and reviews the MAC and L1 R99 aspects of the RACH procedure and considers which aspects may need some modification for E-DCH in Cell_FACH relative to the R99 procedure.

Discussion (Question / Comment):
Decision: Document is noted.

8. HS-PDSCH serving cell change enhancements

R1-081240	Discussion on HS-PDSCH serving cell change procedure	Samsung	

The document was presented by (…) from Samsung and addresses general matters on reliability, complexity, and other aspects of HS-DSCH serving cell change enhancements.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081355	Link Analysis of HS-SCCH based and E-RGCH based Serving Cell Change Command Schemes	Qualcomm Europe	

The document was presented by Sharad Sambhwani from Qualcomm and provides link level performance analysis of two methods proposed to signal the UE of the change in serving cell by the target cell.

- Proposal 1: An HS-SCCH order from the target cell is used for indicating serving cell change to the UE.
- Proposal 2: a new channel carried in the same way as E-RGCH or E-HICH from the target cell is used.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081356	Link Analysis of Dual Scrambling Code and CQI31 based Serving Cell Change Confirmation schemes	Qualcomm Europe	

The document was presented by Sharad Sambhwani from Qualcomm and provides link level performance analysis of two methods proposed for UE sending acknowledgement to NodeBs in the enhanced HS-DSCH serving cell change procedure presented in R1-080815.

- Proposal 1 uses dual scrambling codes as indication
- Proposal 2 uses CQI31 as indication

Discussion (Question / Comment):
Decision: Document is noted.

R1-081433	Proposed method for improving the reliability of the HS-PDSCH Serving Cell Change procedure	Nokia, Nokia Siemens Networks	

Nokia indicated that this contribution was submitted for information only as the herein described procedures do not impact RAN1 work. The document wasn't reviewed in session.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081544	HS-PDSCH Serving Cell Change Enhancements	Ericsson	

The document was presented by Johan Bergman from Ericsson and discusses the need for an additional new acknowledgement from the UE to the target NodeB to acknowledge that the UE received the re-pointing over HS-SCCH and will move to the target cell (see section 6).

The remaining sections of the contribution are for information to RAN1.

Discussion (Question / Comment):
Decision: Document is noted.

9. Study Item on Dual-Cell HSDPA Operation

R1-081241	Considerations on dual-cell HSDPA operation	Samsung	

The document was presented by Miss (…) from Samsung and recommends taking into account the followings for the feasibility study of the dual cell HSDPA operation.

- The dual-cell operation using the consecutive carriers is focused as long as the benefit of using non-consecutive carriers is not identified.
- The peak data rate of dual cell HSDPA operation is same as the one of the current HSDPA.
- The scheduling per carrier is the baseline.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081318	Dual Cell HSDPA Operation Consideration	HUAWEI	

The document was presented by Wang Zongjie from Huawei and provides first analysis on matters be evaluated for the SI dual-cell HSDPA operation.

- Proposal 1: RAN1 to study the possible HSDPA feedback solution to allow UE feedback the two downlink carrier in one UL carrier and its impacts
- Proposal 2: RAN1 to study whether it's Necessary of the 2nd F-DPCH and how to estimate synchronisation status the 2nd RL.
- Proposal 3: RAN1/2 should consider both joint scheduling scheme and independent scheduling scheme, taken into account radio efficiency, implementation complexity and specification complexity.
- Proposal 4: RAN2 to discuss the corresponding mobility scenario and impacts to mobility related RRC signalling and RRM functionality.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081358	HS-DPCCH Design for Dual Carrier HSDPA	Qualcomm Europe	

The document was presented by Sharad Sambhwani from Qualcomm and provides detailed analysis of the design of the uplink control channel (HS-DPCCH) to carry the ACK/NACK and CQI information of the multiple cells from the UE to the NodeB.

Discussion (Question / Comment): Mr. Chairman thanks Qualcomm for the very detailed paper but, as this is the first meeting on Dual cell HSDPA SI, RAN1 isn't in a position to address/decide such details at this stage. Mr. Chairman encouraged keeping the presentation as short as possible and to keep focus on overall view of the SI.
Decision: Document is noted.

R1-081359	Link Analysis of HS-DPCCH ACK/NACK for Dual Carrier HSDPA	Qualcomm Europe	

The document was presented by Sharad Sambhwani from Qualcomm and shows an evaluation of the ACK/NACK performance of each of the HS-DPCCH for the proposed scheme in different channel types (AWGN PA3, PB3, VA30, VA120) and subject to 9% transmit EVM.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081360	Link Analysis of HS-DPCCH CQI for Dual Carrier HSDPA	Qualcomm Europe	

The document was presented by Sharad Sambhwani from Qualcomm and shows an evaluation of the CQI performance of each of the HS-DPCCH for the proposed scheme in different channel types (AWGN PA3, PB3, VA30, VA120) and subject to 9% transmit EVM.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081361	System Benefits of Dual Carrier HSDPA	Qualcomm Europe	

Document wasn't presented. Document is noted.

R1-081437	Dual Carrier HSDPA assumptions and standards impact	Qualcomm Europe	

The document was presented by Sharad Sambhwani from Qualcomm and looks at basic assumptions, basic design considerations and at the standards impact.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081438	Dual Carrier operation for CELL_DCH	Qualcomm Europe	

The document was presented by Sharad Sambhwani from Qualcomm and proposes:

- Proposal 0: I/Q scheme using Cch,256,33,I for the 2nd HS-DPCCH to be the baseline HS-DPCCH design for DC-HSDPA, and a maximum of 1 dedicated channel be supported on the uplink.
- Proposal 1: RAN1/RAN2 should evaluate the impact of joint and disjoint queues to the performance at the application layer (at the TCP layer at least).
- Proposal 2: RAN1/RAN2 should evaluate the impact of joint and disjoint scheduling to the performance at the application layer (at the TCP layer at least).
- Proposal 3: RAN1/RAN2 should evaluate the gains of dynamic supplementary carrier enabling and disabling.
- Proposal 4: RAN1/RAN2 should evaluate different event and measurement reporting schemes.
- Proposal 5: The DC-HSDPA feature shall support the deployment of hotspots. The UTRAN shall be able to assign HSDPA channels on one or both carriers from any sector in the active set. (For example, it shall be possible to assign an active set containing sectors A and B; where sector A operates with DC-HSDPA and sector B operates with a single carrier HSDPA)

Discussion (Question / Comment): Huawei objected on Proposal 0.
Decision: Document is noted.

R1-081434	Considerations on the dual cell HSDPA operation	Nokia, Nokia Siemens Networks	

The document was presented by Arto Lehti from Nokia and proposes the TR be structured as follows:

- *Implications to UE implementation*
- *UE performance requirements*
- *Initial capability considerations*
- *Implications to physical layer specifications*
- *Implications to L2/L3 specifications*
- *System evaluation scenarios*

- *Radio resource management*
- *Allocation of common and dedicated channels*

Discussion (Question / Comment): Discussion how to handle the suggested scenario where both RAN1 & RAN4 can approve text proposals separately but TR drafts should be agreed in both working groups.
Decision: Document is noted. Agreement in RAN1 that Text Proposal are brought to the WG that is most responsible for the technical area, and should be brought to other WG on request. Text Proposal should be agreeable separately in the WGs. TR versions should be brought to both WGs to ensure consistency and visibility.

R1-081545	Considerations on Dual-Cell HSDPA Operation	Ericsson	

The document was presented by Johan Bergman from Ericsson and discusses some impacts and considerations on dual-cell HSDPA operation. Initial performance evaluation results linked to these considerations are in R1-081546.

Discussion (Question / Comment):
Decision: Document is noted.

R1-081546	Initial Multi-Carrier HSPA performance evaluation	Ericsson	

Document is noted.

R1-081655	TR skeleton	Qualcomm Europe	(R1-081362)

The document was presented by Josef Blanz from Qualcomm and is an attempt to merge both proposals for TR skeleton in one.

Discussion (Question / Comment):
Decision: Document is noted. It shall be revised in R1-081656 to reflect mainly discussions around the evaluation metrics.

R1-081610	Skeleton TR	Nokia, Nokia Siemens Networks	

Document is noted.

Friday 4th

R1-081656	TR skeleton	Qualcomm Europe	(R1-081655)

The document was presented by Josef Blanz from Qualcomm.

Discussion (Question / Comment):
Decision: Document is noted and TR is endorsed in version 0.1.0 (R1-081690)

In addition, scenarios for evaluation are for email approval until Friday 11/4.

Done on April 23rd

R1-081706	Simulation Assumptions for DC HSDPA Performance Evaluations	Qualcomm Europe, Ericsson, Nokia, Nokia Siemens Networks	

10. 64QAM for 1.28 Mcps TDD HSDPA

R1-081671	Summary of TDD ad hoc session	Ad Hoc moderator (NTT DoCoMo)	

The document was presented by Sadayuki Abeta from NTT DoCoMo and provides the outcomes of dedicated parallel session on HSPA TDD (**AI 10, 11, 12 and 13**).

Discussion (Question / Comment):
Decision: Document is noted.

R1-081409	25.223 CR0052 (Rel-8, F) Introduction the 64QAM constellation for 1.28 Mcps TDD HSDPA	ZTE, RITT, CATT, TD-TECH, Spreadtrum Communications, ~~Potevio~~	

Decision: Document is noted and CR is agreed.

R1-081560	25.201 CR0039 (Rel-8, B) Introduction 64QAM for 1.28Mcps TDD HSDPA	ZTE, RITT, CATT, TD-TECH, Spreadtrum Communications	

Decision: Document is noted and CR is agreed.

R1-081561	25.221 CR0155 (Rel-8, B) Introduction 64QAM for 1.28Mcps TDD HSDPA	ZTE, RITT, CATT, TD-TECH, Spreadtrum Communications	

Decision: Document is noted and CR is agreed.

R1-081581	25.222 CR0150R1 (Rel-8, B) Introduction 64QAM for 1.28Mcps TDD HSDPA	ZTE, RITT, CATT, TD-TECH, Spreadtrum Communications	(R1-081562)

Decision: Document is noted and CR is agreed.

11. Enhanced CELL_FACH state in 1.28 Mcps TDD (UL/DL)

R1-081601	Simulation results for standalone midamble	TD Tech	R1-081342

Decision: Document is noted.

R1-081343	Standalone midamble usage for ACK/NACK feedback in enhanced CELL_FACH state for 1.28Mcps TDD	TD Tech	

Decision: Document is noted.

R1-081347	Discussion on reducing downlink signalling overhead in eFACH state	TD Tech	

Decision: Document is noted. From the above set of contributions, RAN1 decides awaiting RAN2 decision.

The following set of documents has not been treated.

R1-081341	DRX aspect in 1.28Mcps TDD enhanced CELL_FACH scope	TD Tech	
R1-081345	Procedural analysis of Enhanced Uplink for CELL_FACH state	TD Tech	
R1-081346	Resource allocation method analysis of Enhanced Uplink for CELL_FACH state	TD Tech	
R1-081602	Mapping between HS-DSCH RNTI and E-RNTI in Ehanced CELL_FACH for 1.28mcps	TD Tech	R1-081344

12. Continuous Connectivity for packet data users for 1.28Mcps TDD

R1-081349	Some suggestions on scheduling in CPC for 1.28Mcps TDD	TD Tech	

Decision: Document is noted.

R1-081403	Solutions for CPC for 1.28Mcps TDD	CATT	

Decision: Document is noted.

R1-081558	Analysis of TD-SCDMA HSPA plus Downlink CPC Solution	ZTE	

Decision: Document is noted.

R1-081559	Analysis of TD-SCDMA HSPA plus Uplink CPC Solution	ZTE	

Decision: Document is noted.

Following document was not reviewed during the session.

R1-081348	Uplink reference signal design for 1.28Mcps TDD CPC scope	TD Tech	

13. Study Item on Scope of future HSPA Evolution for 1.28Mcps TDD

R1-081351	MIMO simulation results for 1.28Mcps TDD HSPA+ scope	TD Tech	

Decision: Document is noted.

R1-081404	Simulation Results of 8×2 MIMO schemes for 1.28Mcps TDD system	CATT	

Decision: Document is noted.

R1-081557	Link level results of MIMO for the antenna array based 1.28 Mcps TDD system	ZTE	

Decision: Document is noted.

R1-081650	Introduction of PSRC scheme for 1.28Mcps TDD MIMO system	TD Tech, CATT, ZTE	

Decision: Document is noted.

Conclusion: The contents in 1650 are agreed. Prepare the TP for next meeting

R1-081352	Text proposal to TR 25.824 for 1.28Mcps TDD Layer 2 Enhancement	TD Tech	

14. Closing of the meeting

RAN1 Chairman, Mr. Dirk Gerstenberger expressed his appreciation to the delegates and the host, the Chinese Friends of 3GPP for their supports.

The meeting was closed at 17:30.

Annex A: List of participants at RAN1 #51

Please see excel file attached to this report

Annex B: TSG RAN WG1 meetings in 2008

TITLE	TYPE	DATES	LOCATION	CTRY
3GPPRAN1#51bis	WG	14 – 18 Jan 2008	Sevilla	SP
3GPPRAN1#52	WG	11 – 15 Feb 2008	Sorrento	IT
3GPPRAN1#52bis	WG	31/03 – 4 April 2008	Shenzhen	CHINA
IMT-Advanced Workshop	AH	7 & 8 April 2008	Shenzhen	CHINA
3GPPRAN1#53	WG	05 – 09 May 2008	Kansas City	USA
3GPPRAN1#53bis	WG	30/06 – 4 July 2008	Warsaw	PL
3GPPRAN1#54	WG	18 – 22 Aug 2008	Jeju	KR
3GPPRAN1#54bis	WG	29/09 – 3 Oct 2008	Prague	CZ
3GPPRAN1#55	WG	10 – 14 Nov 2008	Prague	CZ

MEETING TYPES	
AH = Ad Hoc	CM = Chairmen's meeting
JM = Joint	OR = Ordinary
PM = Preparatory Meeting	RG = Rapporteurs Group
RM = Resolution Meeting	SG = Steering Group
ST = Startup Meeting	TG = Task Group
WG = Working Group	XO = Extraordinary

Annex C: List of CRs agreed at RAN1#51

Spec	CR	R	Cat	Rel	R1 Tdoc	Title	Work Item
25213	0092	-	F	7	R1-081628	Range of E-DCH amplitude ratios with QPSK	RANimp-16QamUplink
25213	0093	-	A	8	R1-081628	Range of E-DCH amplitude ratios with QPSK	RANimp-16QamUplink
~~25213~~	~~0094~~	~~2~~	~~F~~	~~7~~	~~R1-081629~~	~~Restricted Beta Factor Combinations for UL 16QAM~~	~~RANimp-16QamUplink~~
25214	0481	2	F	7	R1-081630	CPC DTX cycle change clarification	RANimp-CPC
25214	0482	2	A	8	R1-081630	CPC DTX cycle change clarification	RANimp-CPC
25212	0263	2	F	7	R1-081639	Clarification to number of HS-PDSCH codes in HS-SCCH less operations	RANimp
25212	0264	2	A	8	R1-081639	Clarification to number of HS-PDSCH codes in HS-SCCH less operations	RANimp
25222	0148	1	F	7	R1-081632	Clarification of TRRI on E-AGCH for 1.28Mcps TDD EUL	LCRTDD-EDCH-Phys
25222	0149	1	F	7	R1-081633	Correction of E-HICH coding for 1.28 Mcps TDD EUL	LCRTDD-EDCH-Phys
25222	0147	1	F	7	R1-081634	Clarification on E-HICH coding for 1.28Mcps TDD	LCRTDD-EDCH-Phys
25224	0183	-	F	7	R1-081401	Correction of E-PUCH power control for 1.28Mcps TDD EUL	LCRTDD-EDCH-Phys
25224	0184	1	F	7	R1-081635	Clarification of the E-AGCH monitoring for 1.28Mcps TDD EUL	LCRTDD-EDCH-Phys
25224	0174	1	F	7	R1-081334	EUL power control clarification for 1.28Mcps TDD	LCRTDD-EDCH-Phys
25224	0181	1	F	7	R1-081636	EUL power control improvement for 1.28Mcps TDD	LCRTDD-EDCH-Phys
25224	0182	1	F	7	R1-081596	Use of Special Bursts for DTX on FACH in 1.28 Mcps TDD	TEI-7
25223	0052	-	B	8	R1-081409	Introduction the 64QAM constellation for 1.28 Mcps TDD HSDPA	RANimp-64Qam1.28TDD
25201	0039	-	B	8	R1-081560	Introduction 64QAM for 1.28Mcps TDD HSDPA	RANimp-64Qam1.28TDD
25221	0155	-	B	8	R1-081561	Introduction 64QAM for 1.28Mcps TDD HSDPA	RANimp-64Qam1.28TDD
25222	0150	1	B	8	R1-081581	Introduction 64QAM for 1.28Mcps TDD HSDPA	RANimp-64Qam1.28TDD

Spec	CR	R	Cat	Rel	R1 Tdoc	Title	Work Item
36211	0004	-	F	8	R1-081576	Correction of the number of subcarriers in PUSCH transform precoding	LTE-Phys
36211	0005	-	F	8	R1-081577	Correction of PHICH mapping	LTE-Phys
36211	0006	-	F	8	R1-081578	Correction of PUCCH resource index for PUCCH format 2	LTE-Phys
36211	0010	1	F	8	R1-081695	UL DM RS Hopping	LTE-Phys
36213	0013	1	F	8	R1-081703	UL HARQ Operation and Timing	LTE-Phys
36213	0010	-	F	8	R1-081609	Specification of UL control channel assignment	LTE-Phys
36211	0012	-	F	8	R1-081685	Limiting the constellation size of ACK transmission when transmitted in PUSCH	LTE-Phys
36211	0009	1	F	8	R1-081699	PUCCH format 1	LTE-Phys
36211	0007	2	F	8	R1-081686	Correction of the predefined hopping pattern for PUSCH	LTE-Phys
36211	0011	-	F	8	R1-081691	TDD PRACH Configurations	LTE-Phys
36212	0003	-	F	8	R1-081667	Joint coding of CQI and ACK on PUCCH	LTE-Phys
36211	0008	-	F	8	R1-081665	Non binary hashing functions	LTE-Phys
36213	0003	1	F	8	R1-081583	PUCCH timing and other formatting and typo corrections	LTE-Phys
36213	0006	1	F	8	R1-081697	PUCCH power control for non-unicast information	LTE-Phys
36213	0014	-	F	8	R1-081687	SRS Power Control	LTE-Phys
36213	0011	-	F	8	R1-081657	Precoding Matrix for 2Tx Open-loop SM	LTE-Phys
36213	0012	-	C	8	R1-081658	Clarifications on UE selected CQI reports	LTE-Phys
36213	0008	-	F	8	R1-081584	UE ACK/NACK Procedure	LTE-Phys
36213	0009	-	F	8	R1-081582	UL ACK/NACK timing for TDD	LTE-Phys

Annex D: List of Outgoing LSs from RAN1#51

R1	Response to (Ic LS)	To	Cc	Title	Contact	Ref'd /Attachd Tdoc	Release	WI
R1-081663		R4		LS on UL Sub-Frame Transmission Symbol of Sounding Reference Signals	Samsung		Rel-8	LTE
R1-081676	R1-080632 (R2-080520)	R2		LS on SI-1 transmission	Ericsson		Rel-8	LTE
R1-081680	R1-081181 (R4-080535)	R4		LS on switch time requirements for LTE half duplex	Ericsson		Rel-8	LTE
R1-081683		R2		LS on information about new PDCCH Format 1C	Ericsson		Rel-8	LTE
R1-081688	R1-072650 (R4-070802)	R4		LS on CQI reference period	Panasonic		Rel-8	E-UTRAN
R1-081692		R2	R4	LS on UE capability for DRS	CMCC		Rel-8	LTE
R1-081694		R4		LS on information about RAN1decision regarding downlink power settings	Nokia		Rel-8	LTE
R1-081696		R2		LS about RAN1 decision regarding to the transmission of UL/DL allocation signal	Nokia		Rel-8	LTE
R1-081698		R2		LS on information about RAN1 assumptions regarding TPC-PDCCH	Ericsson		Rel-8	LTE
R1-081700		R4		LS on transmission of UE-specific RS in subframes #0 and #5	Qualcomm		Rel-8	LTE-Phys
R1-081702		R2, R3, R4		LS on E-AICH Power Offset and Error Targets for AICH/E-AICH	Qualcomm	R1-080810, R1-081353	Rel-8	Enhanced Uplink in CELL_FACH State in FDD

R1-081704		R2	R3	LS on additional RSRP trigger for ICIC	Ericsson		Rel-8	SAE/LTE
R1-081705		R2, R4		LS on Transport Block Size	Motorola	R1-081589, R1-081638	Rel-8	LTE-Phys

Annex E: List of Tdocs at RAN1 #51

Please see excel file attached to this report

Annex F: List of actions

1. Outgoing LS.

LS to RAN4 on DRS Interaction with P/S-SCH and P-BCH shall be prepared for email approval until 11/04.

R1-081700	LS on transmission of UE specific RS in subframes #0 and #5	RAN1, Qualcomm	

Done: Final LS is agreed in R1-081700 (referring to Mr. Chairman's email dated on April 11th)

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LS (Nokia) to RAN2 on Signalling of PHICH resources on PBCH shall be prepared for email approval until 11/4.

R1-081696	LS on RAN1 decision regarding to the transmission of UL/DL allocation signal	RAN1, Nokia	

Done: Final LS is agreed in R1-081696 (referring to Mr. Chairman's email dated on April 14th)

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LS (Ericsson) to RAN2/RAN4 on MCS Table design shall be prepared for email approval until 11/04.

R1-081705	LS on Transport Block Size	RAN1, Motorola	

Done: Final LS is agreed in R1-081705 (referring to Mr. Chairman's email dated on April 22nd)

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R1-081600	Draft LS on information about RAN1decision regarding downlink power settings	Nokia	

LS is for email approval until 11/04.

Done: Final LS is agreed in R1-081694 (referring to Mr. Chairman's email dated on April 11th)

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R1-081591	Draft LS on information about RAN1 assumptions regarding TPC-PDCCH	Ericsson	

LS is for email approval until 11/04.

Done: Final LS is agreed in R1-081698 (referring to Mr. Chairman's email dated on April 11th)

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LS to RAN2 on the decisions on UE capabilities shall be prepared for email approval until 11/04.

R1-081692	LS on UE capability for DRS	RAN1, CMCC	

Done: Final LS is agreed in R1-081692 (referring to Mr. Chairman's email dated on April 11th)

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LS to RAN2 on decision on the additional RSRP trigger for ICIC purpose.

R1-081704	LS on additional RSRP trigger for ICIC	RAN1, Ericsson	

Done: Final LS is agreed in R1-081704 (referring to Mr. Chairman's email dated on April 23rd)

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R1-081642	Draft LS on E-AICH Power Offset and Error Targets for AICH/E-AICH	Qualcomm Europe	

LS is for email approval until 11/04.

Done: Final LS is agreed in R1-081702 (referring to Mr. Chairman's email dated on April 11th)

2. CR approval

R1-081628	Range of E-DCH amplitude ratios with QPSK	Nokia, Nokia Siemens Networks	(R1-081424) (R1-081425)

CR is for email approval until Friday 11th April.

Done: CR is agreed in R1-081628 (referring to Mr. Chairman's email dated on April 18th)

Since the agreed CR in R1-081628 is based on the agreed CR in R1-081629, then R1-081629 may be considered as withdrawn.

The title of R1-081628 is modified as follows "Range of E-DCH amplitude ratios".

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R1-081662	Summary of off line discussions on E-UTRA UL RS	Samsung	

CR(s) to be prepared for email approval until Friday 18th April.

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R1-081673	Draft 36.211 CR on UL DM RS Hopping	Ericsson	

CR is for email approval until Friday 11th April.

Done: CR is agreed in R1-081695 (referring to Mr. Chairman's email dated on April 11th)

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R1-081677	36.213 CR0013 (Rel-8, F) UL HARQ Operation and Timing	Nokia, Nokia Siemens Networks	

CR is for email approval until Friday 18th April.

Done: CR is agreed in R1-081703 (referring to Mr. Chairman's email dated on April 21st)

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Mapping between PDCCH index and UL A/N index for Dynamic A/N Channels

R1-081609	36.213 CR0010 (Rel-8, F) Specification of UL control channel assignment	Ericsson	

CR is for email approval until Friday 18th April.

Done: CR is agreed in R1-081609 (referring to Mr. Chairman's email dated on April 22nd)

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R1-081666	36.211 CR0009 (Rel-8, F) PUCCH format 1	Qualcomm Europe	

CR is for email approval until Friday 11th April.

Done: CR is agreed in R1-081694 (referring to Mr. Chairman's email dated on April 11th)

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R1-081674	Way forward on TDD PRACH configurations	ZTE, CATT, CMCC, Ericsson, Motorola, Nokia, Nokia Siemens Networks, Huawei, RITT, Samsung, TD-tech	

CR to 36.211 is to be prepared; for email approval until Friday 18th April.

Done: CR is agreed in R1-081691 (referring to Mr. Chairman's email dated on April 22nd)

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R1-081608	36.213 CR0006 (Rel-8, F) PUCCH power control for non-unicast information	Ericsson	(R1-081534)

CR is for email approval until Friday 11th April.

Done: CR is agreed in R1-081697 (referring to Mr. Chairman's email dated on April 11th)

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R1-081648	25.211 DRAFT CR Introduction of E-AICH for the purpose of E-DCH Resource Configuration Allocation	Nokia Siemens Networks, Ericsson, Motorola, NEC, Nokia, NXP, Philips Qualcomm, Samsung	

CR is for email approval until Friday 11th April.

Done: Draft CR is agreed as new baseline for further work (referring to Mr. Chairman's email dated on April 11th)

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R1-081649	25.214 DRAFT CR Introduction of E-AICH for the purpose of E-DCH Resource Configuration Allocation	Nokia Siemens Networks, Nokia, Ericsson, InterDigital, Samsung	

CR is for email approval until Friday 11th April.

Done: Draft CR is agreed as new baseline for further work (referring to Mr. Chairman's email dated on April 11th)

3. Text proposal for TS and TR

R1-081690	TR 25.825 v 0.1.0 on Dual-Cell HSDPA operation	Qualcomm Europe	(R1-081656)

Done: Endorsed TR skeleton is sent over email reflector (referring to Mr. Secretary's email dated on April 25th)