

NOTE: the support of half-duplex UEs is mandatory for the eNB where such a category is allowed in the frequency band supported by the eNB.

The aim is to ensure on the one hand that high end E-UTRAN UEs, supporting data rates representing state of the art level and competitive with other radio technologies are defined, while the medium and lower data rates aim to reduce implementation cost for chipset/terminal vendors and allow adoption of most cost efficient solutions for different market segments. It is expected that the support of the high end data rate terminals is ensured from the very beginning.

Another clear exception from this exercise is that on the low end very cheap product implementation is possible (e.g. for the machine-to-machine market or the voice and very low data rate only segment – to substitute GSM in the medium term) while top end performance is needed for data applications in notebooks, wireless gateways (“wireless DSL”), etc.

Another important aspect that must be ensured is that a higher capability UE can be treated in exactly the same way as for a lower capability UE, if the network wishes to do so, e.g., in case the network does not support some higher capability features. In HSDPA, there has been problems in this respect due to 2-stage rate matching in HARQ. Such problems should be avoided in E-UTRAN, and E-UTRAN UE capabilities should provide the compatibility to ease implementation and interoperability testing.

Annex H (informative): L1/L2 Control Signalling Performance

The target quality on L1/L2 control channels of E-UTRAN is summarized in the two tables below:

Table H-1: DL control signalling

Event	Target quality
DL scheduling information miss detection	(10^{-2})
UL scheduling grant miss detection	(10^{-2})
NACK to ACK error (for UL-SCH)	$(10^{-4} - 10^{-3})$
ACK to NACK error (for UL-SCH)	$(10^{-4} - 10^{-3})$

Table H-2: UL control signalling

Event	Target quality
ACK miss detection (for DL-SCH)	(10^{-2})
DTX to ACK error (for DL-SCH)	$(10^{-2} - 10^{-1})$
NACK to ACK error (for DL-SCH)	$(10^{-4} - 10^{-3})$
CQI block error rate	FFS $(10^{-2} - 10^{-1})$

Annex I (informative): Change history

Change history (before approval)							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
2006-06	RAN2 Ad.	R2-062020			First version.		0.0.0
2006-06	RAN2 Ad.	R2-062026			RLC operation clarified; High priority and low priority SRBs listed in RRC; New section on RRC procedures; Organisation of paging groups explained; New section on Support for self-configuration and self-optimisation.	0.0.0	0.0.1
2006-06	RAN2 Ad.	R2-062036			Four possible types of allocation added to section 11; New section for the support for real time IMS services.	0.0.1	0.0.2
2006-08	RAN2#54	R2-062206			Annex B on RRC and MAC control added. Minor editorial clarifications.	0.0.2	0.0.3
2006-09	RAN#34	RP-060603			Section 4 on "Overall Architecture" reorganised; Details on RLC operation included (segmentation, PDU size); Overview of System Information and RACH procedure added.	0.0.3	0.0.4
2006-10	RAN2#55	R2-063012			Ciphering for RRC signalling required in eNB as agreed in SA3; Agreements on RLC operation included: concatenation, discard, polling and status reports; Agreed text proposal in R3-061428 on Self Configuration added to section 19; Context transfer of header compression at UPE relocation listed as FFS. Outline of the RACH procedure described.	0.0.4	0.0.5
2006-10	RAN2#55	R2-063039			Miscellaneous editorial corrections; Agreed text proposal R3-061606 on Current status of E-UTRAN Architecture description added to section 4; Agreed text proposal in R3-061613 on Support for self-configuration and self-optimisation added to section 19. Agreed Physical layer model R2-063031 added to section 5	0.0.5	0.1.0
2006-11	RAN2#56	R2-063656			Annex C on system information classification added (R2-063064); Integrity protection for the control plane only (SA3 agreement); Agreements on PDCP and RLC PDU structure/handling reflected; Decisions on mobility aspects such as load balancing, handover, radio link failure and random access procedure added; Agreed MBMS deployment scenarios listed together with MBMS transmissions and principles from 25.813; Agreed text proposal R3-061936 on Radio Resource Management added to section 15; Agreed text proposal R3-061940 on RAN Sharing added to section 10; Agreed text proposal R3-061943 on Roaming/Area Restrictions in SAE/LTE added to section 10; Agreed text proposal R3-062008 on S1 C-Plane Functions and procedures added to section 18; Agreed text proposal R3-062011 on X2 interface added to section 19.	0.1.0	0.2.0
2006-11	RAN2#56	R2-063680			Incorporation of RAN1 agreement regarding the mandatory support of 20Mhz DL bandwidth for UEs i.e. removal of sub-clause 16.1; Editorial corrections.	0.2.0	0.3.0
2006-11	RAN2#56	R2-063681			Removal of the SA3 agreement on integrity protection for the user plane; Addition of Annex D on MBMS Transmission; Editorial corrections.	0.3.0	0.3.1
2006-11	RAN#34	RP-060806			Clean version	0.3.1	0.3.1
2007-01	RAN2#56 bis	R2-070403			SA3 agreement on integrity protection for the user plane included (R2-070016); Annex E on drivers for mobility control added (R2-070276); Agreements on the details of the random access procedure added in section 10.1.5 (R2-070365); New section on UL rate control included (R2-070410); RRC security principles listed in section 13.1 (R2-070044); Agreement on MAC security added to section 13 (R2-062100); Basis for DL scheduling put in section 11.1; Assumptions on neighbour cell list included in section 10.	0.3.1	0.4.0
2007-02	RAN2#57	R2-070451			Number of bits for RACH in TDD clarified; Miscellaneous editorial corrections.	0.4.0	0.5.0
2007-02	RAN2#57	R2-071073			Architecture updated according to R3-070397; Agreements from R2-070802.	0.5.0	0.6.0

2007-02	RAN2#57	R2-071120			RACH model for initial access described; Mapping of the BCCH and System Information principles added; Agreements on DRX included in section 12.	0.6.0	0.7.0
2007-02	RAN2#57	R2-071122			Miscellaneous clarifications	0.7.0	0.7.1
2007-02	RAN2#57	R2-071123			CCCH in DL listed as FFS; SAE Gateway ID removed from section 8.2; PDCP for the control plane listed as FFS in section 4.3.2; Agreements on intra-E-UTRAN handover procedure included in section 10.1.2 (R3-062020).	0.7.1	0.8.0
2007-03	RAN2#57	R2-071124			Agreement on Radio Access Network Sharing (R2-070551) added to section 10.1.7; Overview of the physical layer (R1-071251) included to section 5; Agreed text proposals on <i>S1 interface</i> included in Section 19 (R3-070289, R3-070402); Agreed text proposal R3-070409 on <i>network sharing</i> included in section 10.1.7; Agreed text proposal R3-070411 on <i>Area Restrictions</i> included in section 10.4; Agreed text proposal R3-070448 on <i>Assembly of Intra-E-UTRAN handover command</i> included in section 10.1.2.1.1; Agreed text proposal R3-070451 on <i>inter RAT HO principles</i> included in section 10.2.2; Agreed text proposal R3-070472 on <i>Addressing on S1-C and X2-C</i> added to sections 19.2 and 20.2; Agreed text proposal R3-070494 on <i>Initial Context Setup Function and Procedure</i> added to section 19; Agreed text proposal R3-070495 on <i>S1 Paging function and procedure</i> added to section 19 Figures for mapping between channels split into Uplink and Downlink parts in section 5.3.1 and 6.1.3.	0.8.0	0.9.0
2007-03	RAN#35	RP-070136			S1-U and S1-MME used throughout the document; aGW replaced by EPC when still used; Clean version for information	0.9.0	1.0.0

Change history (after approval)								
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New	
2007-03	RP-35	RP-070136	-		Approved at TSG-RAN #35 and placed under Change Control	1.0.0	8.0.0	
2007-06	RP-36	RP-070399			Changes to management-, handover-, paging- and NAS functions, node- synchronization, X2 UP protocol stack, X2 inter cell load management, IP fragmentation, intra-LTE HO, and TA relation to cells in eNB	8.0.0	8.1.0	
			0001	1				
	RP-36	RP-070494	0002	1	Update on Mobility, Security, Random Access Procedure, etc...	8.0.0	8.1.0	
	RP-36	RP-070399	0003	-	Update on MBMS	8.0.0	8.1.0	
2007-09	RP-37	RP-070637			Update on Security, System Information, Mobility, MBMS and DRX	8.1.0	8.2.0	
			0004	1				
	RP-37	RP-070637	0005	1	Correction of synchronization, handover, trace, eMBMS architecture, and S1 common functions and procedures	8.1.0	8.2.0	
2007-12	RP-38	RP-070913	0006		Clean up and update on security, scheduling, mobility, MBMS and DRX	8.2.0	8.3.0	
				1				
	RP-38	RP-070913	0007		Mobility management	8.2.0	8.3.0	
	RP-38	RP-070913	0008		Correction of eMBMS functions and NAS handling during X2 handover	8.2.0	8.3.0	
	RP-38	RP-071048	0009		Update of Stage 2 to incorporate Interworking with cdma2000	8.2.0	8.3.0	
2008-03	RP-39	RP-080192	0010		CR to 36.300 on NAS States, Persistent Scheduling, C-RNTI Allocation at Handover...	8.3.0	8.4.0	
	RP-39	RP-080192	0011		RAN3 corrections to 36.300 (CR0011)	8.3.0	8.4.0	

EXHIBIT 5

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3/25/2008	4:21 AM	30868	R2-081620.zip
3/27/2008	6:35 AM	16765	R2-081621.zip
3/25/2008	4:21 AM	101545	R2-081622.zip
3/25/2008	4:23 AM	39754	R2-081623.zip
3/25/2008	4:23 AM	134098	R2-081624.zip
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3/25/2008	4:24 AM	34210	R2-081626.zip
3/25/2008	4:34 AM	100019	R2-081627.zip
3/25/2008	4:24 AM	16568	R2-081628.zip
3/25/2008	4:24 AM	93145	R2-081629.zip
3/25/2008	5:34 AM	31238	R2-081630.zip
3/25/2008	8:29 AM	21249	R2-081631.zip
3/25/2008	8:37 AM	250749	R2-081632.zip
3/26/2008	9:46 AM	48020	R2-081633.zip
3/25/2008	6:15 AM	35490	R2-081634.zip
3/25/2008	1:19 AM	34136	R2-081635.zip
3/25/2008	6:43 AM	44660	R2-081636.zip
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3/25/2008	6:47 AM	70479	R2-081644.zip
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3/25/2008	6:49 AM	16672	R2-081646.zip
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3/25/2008	7:22 AM	558299	R2-081662.zip
3/25/2008	6:13 AM	53734	R2-081663.zip
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3/25/2008	12:26 PM	21798	R2-081703.zip
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3/25/2008	6:57 AM	490124	R2-081715.zip
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3/25/2008	7:07 AM	334986	R2-081719.zip
3/25/2008	7:08 AM	99993	R2-081720.zip
3/25/2008	7:09 AM	11792	R2-081721.zip
3/25/2008	7:09 AM	12720	R2-081722.zip
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3/24/2008	10:42 PM	26265	R2-081772.zip
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3/25/2008	7:42 AM	488043	R2-081775.zip
3/25/2008	7:43 AM	23448	R2-081776.zip
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3/25/2008	3:31 AM	21689	R2-081823.zip
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3/25/2008	6:05 AM	26280	R2-081855.zip
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3/25/2008	7:12 AM	35520	R2-081898.zip
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4/4/2008	4:29 PM	172101	R2-081966.zip
4/4/2008	4:29 PM	28607	R2-081967.zip
4/4/2008	4:29 PM	10078	R2-081968.zip
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4/4/2008	4:29 PM	17756	R2-081987.zip
4/4/2008	4:29 PM	17837	R2-081989.zip
4/4/2008	4:29 PM	9002	R2-081990.zip
4/4/2008	4:29 PM	16495	R2-081991.zip
4/4/2008	4:29 PM	20482	R2-081992.zip
4/4/2008	4:29 PM	24470	R2-081993.zip
4/4/2008	4:30 PM	235024	R2-081995.zip
4/4/2008	4:30 PM	88181	R2-081996.zip
4/4/2008	4:30 PM	43097	R2-081997.zip
4/4/2008	4:30 PM	53352	R2-081998.zip
4/4/2008	4:30 PM	112073	R2-081999.zip
4/4/2008	4:30 PM	24755	R2-082000.zip
4/4/2008	4:30 PM	27201	R2-082003.zip
4/4/2008	4:30 PM	38203	R2-082004.zip
4/4/2008	4:30 PM	17319	R2-082005.zip
4/4/2008	4:30 PM	42976	R2-082007.zip
4/4/2008	4:30 PM	37142	R2-082008.zip
4/4/2008	4:30 PM	31360	R2-082011.zip
4/4/2008	4:31 PM	29079	R2-082012.zip
4/4/2008	4:31 PM	29808	R2-082013.zip
4/4/2008	4:31 PM	12450	R2-082014.zip
4/4/2008	4:31 PM	131111	R2-082015.zip
4/4/2008	4:31 PM	23098	R2-082016.zip
4/4/2008	4:31 PM	30321	R2-082017.zip
4/4/2008	4:31 PM	29368	R2-082018.zip
4/4/2008	4:31 PM	48895	R2-082019.zip
4/4/2008	4:31 PM	109683	R2-082020.zip
4/11/2008	7:57 AM	130694	R2-082021.zip
4/4/2008	4:31 PM	180130	R2-082022.zip
4/4/2008	4:31 PM	12949	R2-082024.zip
4/4/2008	4:31 PM	11485	R2-082025.zip
4/4/2008	4:31 PM	82639	R2-082026.zip
4/4/2008	4:31 PM	10167	R2-082027.zip
4/4/2008	4:32 PM	39129	R2-082028.zip
4/4/2008	4:32 PM	16465	R2-082029.zip
4/4/2008	4:32 PM	18413	R2-082030.zip
4/4/2008	4:32 PM	8160	R2-082031.zip
4/4/2008	4:32 PM	15103	R2-082032.zip
4/4/2008	4:32 PM	7556	R2-082033.zip
4/4/2008	4:32 PM	7533	R2-082034.zip
4/4/2008	4:32 PM	9692	R2-082035.zip
4/4/2008	4:32 PM	8974	R2-082036.zip
4/4/2008	4:32 PM	9400	R2-082037.zip
4/11/2008	7:53 AM	9535	R2-082038.zip
4/4/2008	4:32 PM	17752	R2-082039.zip
4/11/2008	7:56 AM	163487	R2-082040.zip
4/11/2008	7:09 PM	11327	R2-082041.zip
4/11/2008	7:13 PM	86299	R2-082042.zip
4/11/2008	7:23 PM	180692	R2-082043.zip
4/11/2008	7:25 PM	49684	R2-082044.zip

4/4/2008	4:32 PM	8600	R2-082045.zip
4/4/2008	4:32 PM	9362	R2-082046.zip
4/4/2008	4:32 PM	8481	R2-082047.zip
4/29/2008	9:26 AM	9058	R2-082048.zip
4/17/2008	2:14 PM	388148	R2-082049.zip
4/17/2008	2:14 PM	875788	R2-082050.zip

EXHIBIT 6

Agenda item: 5.1.1.10
Source: Philips, NXP Semiconductors
Title: Control of HARQ for RACH message 3
Document for: Discussion and Decision

1. Introduction

The current contention based RACH procedure is as shown in figure 1:

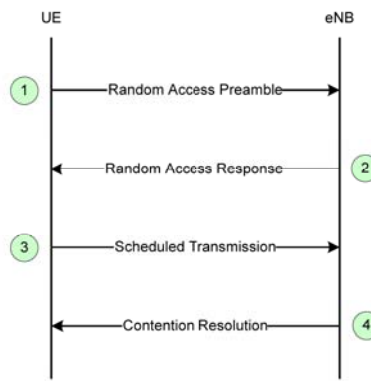


Figure 1 RACH Procedure

RACH message 1 comprises the transmission of a randomly selected signature ("preamble"). A "collision" is said to have occurred if more than one UE transmits the same preamble signature in the same time-frequency resource.

In case of a collision, all the colliding UEs interpret message 2 (which is transmitted by the eNB in response to a preamble and contains an identifier of the preamble, an UL resource grant for the transmission of message 3, and a Temporary C-RNTI) as being for them, and all transmit a message 3 (conveying at least a NAS UE Identifier) in the same UL resources.

The eNB will transmit "ACK" if it successfully decodes message 3, while if it fails to decode message 3 it will transmit "NACK" and the UE(s) will retransmit up to the configured maximum number of retransmissions.

2. HARQ for Message 3

If the eNB succeeds in decoding message 3, HARQ ACK is sent and any collision is resolved when message 4 is received.

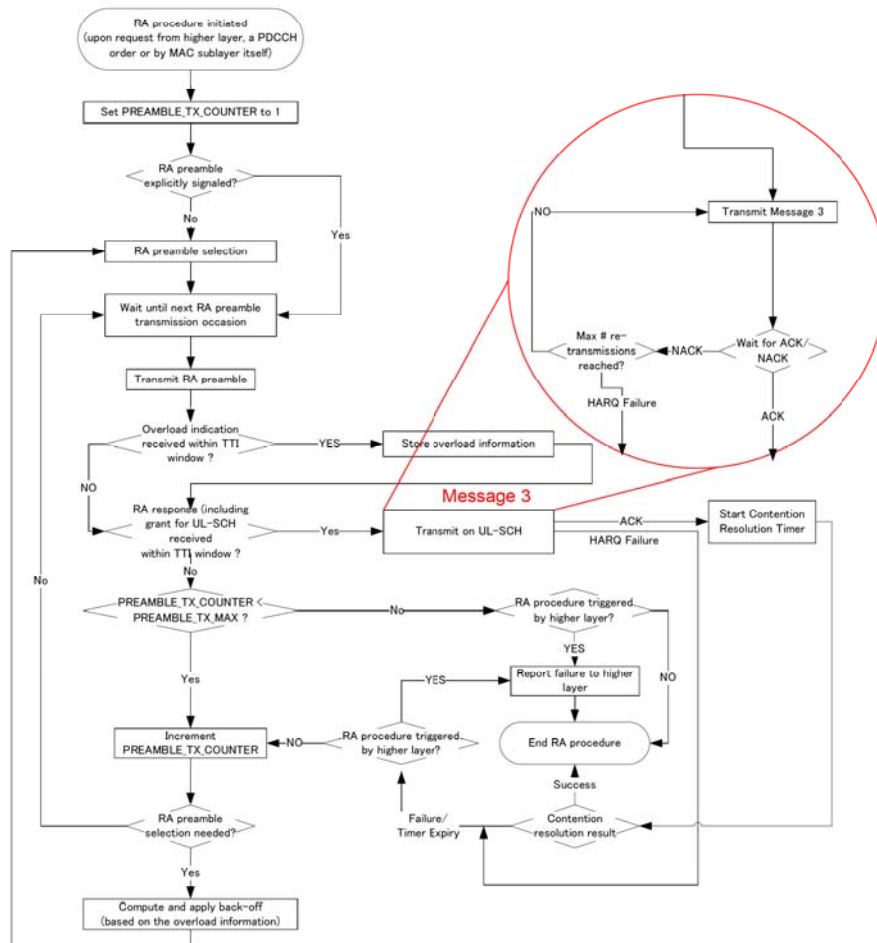


Figure 2 MAC Random Access Procedure

Figure 2 shows how the HARQ procedure for Message 3 is included in the random access procedure. In this diagram we assume the contention resolution timer is not started until after an ACK has been received for message 3. HARQ failure in message 3 leads to the same result as contention resolution timer expiry.

However, in practice if a collision occurs, the likelihood is that no number of retransmissions will succeed, as all the colliding UEs will retransmit at the same time. The maximum number of HARQ retransmissions of message 3 should therefore be tightly limited, as a high maximum number of retransmissions will simply increase the delay before the collided UEs can start again.

Moreover, if the transmit power is set appropriately after the last power-ramped preamble transmission, a large number of retransmissions should be unnecessary.

2.1 RRC_IDLE and Connection Re-establishment cases

UEs which are RRC_CONNECTED already have a valid C-RNTI for transmission in message 3.

For UEs which are repeatedly or regularly accessing the network, it is undesirable for them to have to start the RACH access procedure again from the beginning every time a collision occurs. Some delay can be avoided for these UEs by allowing a larger number of HARQ retransmissions for message 3 if the UE already has a C-RNTI. In this case the eNB could flush its message 3 reception buffer when it reaches the maximum number of retransmissions for UEs which do *not* have a C-RNTI, and then still receive the message 3 from the UE with a C-RNTI. This would mean that the Node B would in any case NACK the first retransmission, but UE's with only a temporary C-RNTI would not be allowed to retransmit, while UEs with a C-RNTI would retransmit again.

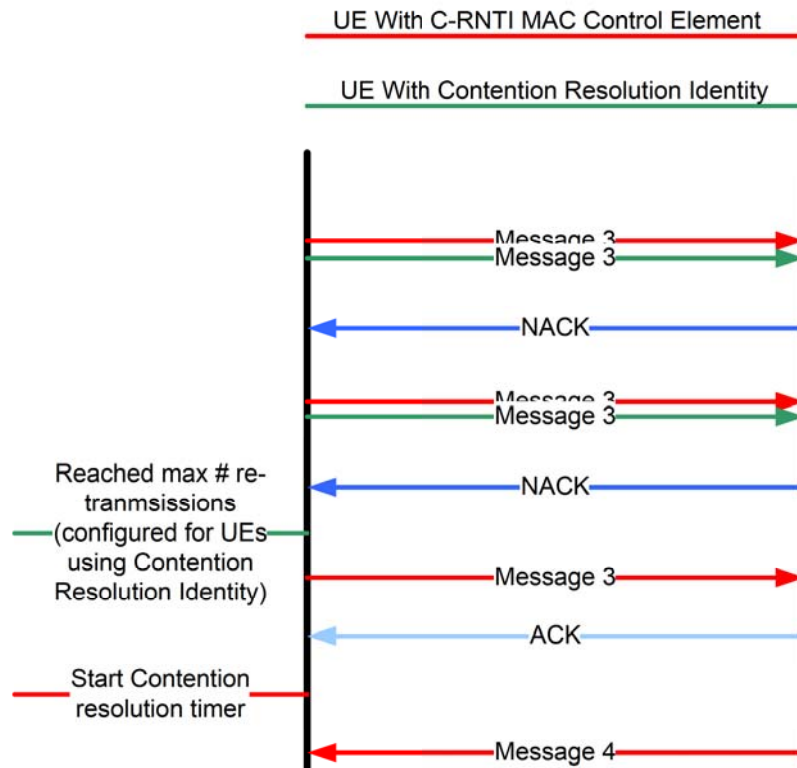


Figure 3 HARQ control for UEs with and without C-RNTI

Figure 3 shows a case of 2 collided UEs transmitting message 3, one including a C-RNTI MAC control element and one with RRC UE Contention resolution Identity. In this example, the eNB sends back NACK twice, then the maximum number of re-transmissions is reached for the UE using the Contention Resolution Identity (as it does not yet have a C-RNTI). The Message 3 from the UE using C-RNTI is then received successfully at the eNB and the eNB sends ACK to the UE. The UE then starts the contention resolution timer and, in this example, successfully receives message 4.

Although setting a different maximum number of retransmissions would not help in the case of a collision between two UEs both with C-RNTIs, it would effectively give priority to the UE with a C-RNTI in the case of a collision with a UE without a C-RNTI.

5. Conclusions

In this contribution, we have presented our views on HARQ control for message 3.

- the maximum number of HARQ retransmissions should be kept reasonably low, in order to limit the delay in case of a collision;
- it should configure a higher maximum number of message-3 HARQ retransmissions for UEs which already have a C-RNTI than for UEs which do not already have a C-RNTI.

6. References

[1] TS36.321 3GPP TS 36.321 V8.1.0 (2008-03) MAC Protocol Specification

7. Text Proposal for 36.321

5.4.2.2 HARQ process

Each HARQ process is associated with a HARQ buffer.

Each HARQ process shall maintain a state variable CURRENT_TX_NB, which indicates the number of transmissions that have taken place for the MAC PDU currently in the buffer. When the HARQ process is established, CURRENT_TX_NB shall be initialized to 0.

The UE is configured with a maximum number of transmissions that is identical across all HARQ Processes and all Logical Channels.

If the HARQ entity provides a new PDU, the HARQ process shall:

- set CURRENT_TX_NB to 0;
- set CURRENT_IRV to 0;
- store the MAC PDU in the associated HARQ buffer;
- generate a transmission as described below.

If the HARQ entity requests a re-transmission, the HARQ process shall:

- if there is a measurement gap at the time of the re-transmission:
 - increment CURRENT_TX_NB by 1;
 - else:
- if an uplink grant for this was received on [PDCCH]:
 - set CURRENT_IRV to the value indicated in the uplink grant;
 - generate a transmission as described below;
- if no uplink grant for this was received on [PDCCH]:
 - if a HARQ ACK was received for the last preceding transmission of the same data:
 - increment CURRENT_TX_NB by 1.
 - if no HARQ ACK was received for the last preceding transmission of the same data:
 - generate a transmission as described below.

To generate a transmission, the HARQ process shall:

- instruct the physical layer to generate a transmission with the redundancy version corresponding to the CURRENT_IRV value and the transmission timing;
- if CURRENT_IRV < [Y] [FFS]:
 - increment CURRENT_IRV by 1;
- increment CURRENT_TX_NB by 1;

The HARQ process shall:

- if CURRENT_TX_NB = maximum number of transmissions configured (where in the case of the uplink grant having been received in a Random Access Response, the maximum number of transmissions depends on whether the UE already has a C-RNTI):
 - flush the HARQ buffer;
 - if the transmission corresponds to a transmission of CCCH and no HARQ ACK is received for this process:
 - notify RRC that the transmission of the corresponding MAC SDU failed.

The HARQ process may:

- if CURRENT_TX_NB = maximum number of transmissions configured (where in the case of the uplink grant having been received in a Random Access Response, the maximum number of transmissions depends on whether the UE already has a C-RNTI) and no HARQ ACK is received for this process:
 - notify the relevant ARQ entities in the upper layer that the transmission of the corresponding RLC PDUs failed.

Editor's note: Demultiplexing of multiple positive or negative acknowledgements and the time of reception relative to the transmission of data in a HARQ process is handled by L1.

EXHIBIT 7



3GPP_TSG_RAN_WG2 Archives

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Font: Proportional Font

Subject: Re: Tdoc allocation tool for RAN2 #62 started
From: Joern Krause <[\[log in to unmask\]](#)>
Reply-To: Joern Krause <[\[log in to unmask\]](#)>
Date: Wed, 23 Apr 2008 10:52:02 +0200
Content-Type: multipart/mixed



Parts/Attachments: [text/plain](#) (395 lines) , [text/html](#) (597 lines) ,
[message/rfc822](#) (597 lines) , [R2-08xxxx_draft_report_RAN2_61bis_Shenzhen.zip](#) (597 lines)

Dear all,
 I need to apologize for the corrupted table in my previous email (obviously the reflector reformatted my email in an unintended way). Please look instead into annex E of the attached draft report which will be distributed later this week as R2-082061 (still working on the final Tdoc list).
 BR

Joern

P.S.: In fact there are 92 endorsed CRs instead of 91.

Joern Krause
 ETSI MCC
[\[log in to unmask\]](#)

From: Joern Krause [[mailto:\[log in to unmask\]](mailto:[log in to unmask])]
Sent: 23 April 2008 10:15
To: 3GPP_TSG_RAN_WG2
Subject: Tdoc allocation tool for RAN2 #62 started

Dear all,
 You can reserve a Tdoc number and upload the corresponding Tdoc for RAN2 #62 in Kansas City under:
<http://webapp.etsi.org/MeetingCalendar/MeetingDetails.asp?mid=26789>
 Please find at the end of this email the list of **endorsed CRs of RAN2 #61bis**. These CRs have to be resubmitted to RAN2 #62 with the CR number given in

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EXHIBIT 8

Agenda Item: 3
Source: ETSI MCC
Title: **Draft** Report of 3GPP TSG RAN WG2 meeting #61bis,
Shenzhen, China, March 31 – April 4, 2008
Document for: Approval

Draft Report of 3GPP TSG RAN WG2 meeting #61bis

held in Shenzhen, China
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Organisation of the meeting

Meeting: 3GPP TSG RAN WG2 #61bis
Meeting location: Shenzhen, China
Duration: Monday 31.03.2008 - Friday 04.04.2008
Host: ZTE Corporation
TSG RAN WG2 Chairman: Gert-Jan van Lieshout (Samsung) email: Gert.vanLieshout@samsung.com
TSG RAN WG2 Vice chairman: Richard Burbidge (Motorola) email: Richard.Burbidge@motorola.com
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Technical documents: ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_61bis/Docs
Ad hocs: Parallel ad hocs are held (see agenda item 2) on
- LTE user plane (agenda item 5.1, Wed-Thu): chaired by Gert-Jan van Lieshout
- LTE control plane (agenda item 5.2, Tue-Thu): chaired by Richard Burbidge
- UTRA/UTRAN (agenda item 6, Mon-Wed): chaired by Patrick Fischer
No joint ad hocs with other WGs were held.
next meetings: TSG RAN WG2 #62, 04.05. - 09.05.2008 Kansas City, USA
TSG RAN #40, 27.05. - 30.05.2008 Prague, Czech Republic

Statistics

TSG RAN WG2 #61bis was held 3 weeks after TSG RAN #39.

- 161 participants
- 651 Tdocs allocated with actual 605 contributions (including xx allocated CRs)
- 48 incoming liaison statements
- 17 outgoing liaison statements (note: 1 further LS R2-082048 is still under email discussion)
- 92 endorsed CRs from RAN2 #61bis which will be resubmitted to RAN2 #62 for final agreement:
 - 0 CRs for Rel.99
 - 1 CR for Rel.4
 - 1 CR for Rel.5
 - 3 CRs for Rel.6
 - 31 CRs for Rel.7
 - 56 CRs for Rel.8 (42 for UTRA Rel.8 and 14 for E-UTRA/LTE)

Note: The sequence in which the different topics appear in this report is related to the agenda of the meeting. However, the Tdocs do not necessarily appear in the sequence as they were treated in the meeting.

1 Opening of the meeting

TSG RAN WG2 chairman Gert-Jan van Lieshout (Samsung) opened the meeting RAN WG2 #61bis on Monday morning 31.03.2008 at 09:00 o'clock.

On behalf of the host (ZTE Corporation) Zhisong Zuo welcomed the delegates to Shenzhen and explained organisational issues.

RAN WG2 meeting rooms:

Main RAN2 room: Espana 1, for about 200 participants, Mon-Fri

First ad hoc room: Madrid 5: for about 70 people, Mon-Thu

2nd ad hoc room: Madrid 8: for about 50 people, Tue-Wed

Other RAN WGs: Same floor (RAN1: Espana 2 & Madrid 3*, RAN3: Madrid 2, RAN4: Barcelona & Madrid 1*).
*: ad hoc rooms

1.1 Call for IPR

Gert-Jan van Lieshout (TSG RAN WG2 chairman) made the following call for IPRs and reminded the delegates of their obligations with respect to IPRs:

The attention of the delegates of this Working 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 delegates were asked to take note that they were hereby invited:

- to investigate whether their organization or any other organization owns IPRs which were, or were likely to become Essential in respect of the work of the work of 3GPP.
- to notify their respective Organizational Partners of all potential IPRs, e.g., for ETSI, by means of the IPR Statement and the Licensing declaration forms (<http://webapp.etsi.org/lpr/>).

NOTE: IPRs may be declared to the Director-General or Chairman of the SDO, but not to the chairmen.

2 Approval of the agenda

R2-081400: Proposed agenda for RAN2 #61bis, Shenzhen, China, 31.03.-04.04.2008 RAN2 chairman
=> Approved

Schedule as it was finally carried out:

Day	Main RAN2 room	1st ad hoc room	2nd ad hoc room
Monday Morning before coffee break	AI 1-3	UMTS: AI 6.0, 6.1, 6.2	
Monday Morning after coffee break	LTE: AI 4.1 (LSin)	UMTS: AI 6.0, 6.1, 6.2	
Monday Afternoon	LTE: AI 4.3.1, 4.3.2 (partly)	UMTS: AI 6.3 (except 6.3.9) AI 6.4.1 (partly)	
Monday 17:45 ->	Joint UMTS/LTE on: Home eNB CR: 4.7.1 (partly), inter-RAT mobility: AI 4.10		
Tuesday	LTE: AI 4.3.2 (rest), 4.3.3, 4.3.4, L1/2 control in RRC: AI 4.4, Other (unicast): AI 4.5	LTE CP: RRC: AI 5.2.1.1, 5.2.1.2	UMTS: AI 6.3.9, 6.4.1 (rest), 6.4.2 – 6.4.3
Wednesday	LTE UP: MAC: AI 5.1.1.1-5.1.1.5, 5.1.1.6 (partly)	LTE CP: RRC: AI 5.2.1.2 (rest), 5.2.1.5, 5.2.1.7 (just R2- 081688)	UMTS: AI 6.4.4 – 6.4.11, 6.5
Thursday	LTE UP: MAC: 5.1.1.7 (partly), 5.1.1.8 (partly), RLC: 5.1.2, PDCP: 5.1.3, UE capabilities: 5.1.4	LTE CP: RRC: AI 5.2.1.3, 5.2.1.4 (partly), 5.2.1.6 (partly), 5.2.1.8 (partly), cell selection: 5.2.2.3, 5.2.2.5	
Friday	Reporting LTE CP/UP Left-overs section 4 Outgoing LTE liaisons		

Not treated agenda items (AI):

- 4.6 Broadcast services and subsections
- 4.8 UE specific RRM information at handover
- 4.9 SON (Self Optimising Networks)
- 5.1.1.10 Other (unicast)
- 5.2.1.8 Methodology
- 5.2.2.2 Cell reselection

No inputs were submitted to agenda items:

- 4.2 Stage-2 status
- 4.4.1 General (L1/2 control in RRC)
- 4.4.4 RLC (L1/2 control in RRC)
- 5.1.1.9 RRC configurable parameters
- 5.1.2.2 RLC header formats
- 5.1.4.1 Status (of UE capabilities)
- 5.1.5 Model of the physical layer (36.302) and subsections
- 5.2.2.1 Status (of Cell selection & re-selection (36.304))
- 5.2.2.4 Speed Dependant Cell Reselection

3 Minutes of the previous meeting/reporting from other meetings

R2-081401: Draft report of RAN2 #61, Sorrento, Italy, 11-15.02.2008 ETSI MCC

=> Comments to be raised before Friday of RAN2 meeting #61bis.
Revised in R2-081441 to include some review comments.

R2-081441 Updated draft report of RAN2 #61, Sorrento, Italy, 11-15.02.2008 ETSI MCC
Contents agreed. Revised in R2-081445 to provide final version.

R2-081445 Final report of RAN2 #61, Sorrento, Italy, 11-15.02.2008 ETSI MCC Report
Agreed.

Chairman's report from TSG-RAN#39:

CR's

RAN2 CRs for RAN #39 approved except:

- 25.999 company CR replaced the original CR
- 36.321, 36.331: company CRs (contention resolution) replaced original RAN2 CRs
- DOB: CRs were rejected by voting

UMTS:

Three new WI's with RAN2 as 1st responsible:

- WI: HSPA VoIP to WCDMA/GSM CS continuity (RP-080229) Approved
- WI: HS-DSCH Serving Cell Change Enhancements (RP-080227) Approved
- WI: Support of UTRA HNB (RP-080159). In principle agreed.
 - RAN2 should review the WI-sheet, and restrict the objectives to a set for which completion in Rel-8 timeframe can be reasonably expected.

LTE:

- No change in time plan for RAN2
- Not unnecessary re-open agreements; focus on closing open issues
- "Option pruning"

Chairman's report from TSG-SA#39:

- MBMS was removed from Rel-8 (see SP-080218)
- SA requests the opinion of RAN2 how to handle ETWS in Rel-8 given absence of MBMS (See SP-080223)
- Home-NB/Home-eNB:
SA agreed on a CR in SP-080188. RAN2 is requested to review this CR and see whether it causes any problems from RAN2 point of view. If we have any concerns, we should liaise with CT1 and CT1 can originate an additional CR on 22.011.

Other:

- If no concerns are raised before the end of the meeting, intention is to abandon following 2 TR's:
 - 25.819 Rel-7 "7.68 Mcps TDD option: Layer 2 and 3 protocol aspects" v1.0.0
VHCRTDD: Layer 2 and layer 3 protocol aspects
 - 30.301 Rel-7 "3.84 Mcps TDD enhanced uplink: RAN WG2 Stage 2 decisions" v0.2.0
RP-30: eventually to be merged into 25,309.

See agenda item "9 Any other business" for the decision.

4 LTE General

Under this agenda item we discuss Stage-2 issues, and also issues that are too general (e.g. impacting multiple protocols) or important (e.g. major impact on other groups) to be discussed in the CP / UP sessions separately.

4.1 Incoming LS to LTE

R2-081412: Reply LS to R2-080609 and R2-081363 on various aspects related to GERAN to E-UTRAN interworking (GP-080395; to: RAN2, RAN4; cc: -; contact: NSN) GERAN - RAN2 action requested

- Two questions to us:
 - Priority algorithm mandated for UMTS/GERAN-only mobile ? => We see no problem from our side to mandate this.
 - Predefined / default configurations; see what we can decide this week.

=> Response in R2-081926

- R2-081411: LS on Equal priority Inter-RAT reselection - (GP-080298; to: RAN2; cc: -; contact: NSN)
GERAN - RAN2 action requested
=> There are contributions. Can sent response after that discussion in R2-081927
- R2-081413: Reply LS to R2-075478 on CSG related mobility (stage 2 text) - (GP-080417; to: SA1, RAN2;
cc: SA2, RAN3, RAN4, RAN1; contact: NSN) GERAN - RAN2 action requested
=> There are contributions. Can sent response after that discussion in R2-081928
- R2-081403: LS on Release 8 non-essential SAE features (SP-080218; to: CT1, CT3, CT4, CT6, RAN1,
RAN2, RAN3, RAN4, SA1, SA2, SA3, SA4, SA5, CT, GERAN, RAN; cc: -; contact: Ericsson)
SA no explicit RAN2 action requested - Janne Peisa (Ericsson)
=> Noted
- R2-081404: LS on Decision of MBMS and LCS in SAE Rel8 Scope Discussions (SP-080223; to: SA2,
RAN1, RAN2, RAN3; cc: SA1, GERAN2; contact: NTT) SA - RAN2 action requested -
presented by Mikio Iwamura (NTT)
=> There are contributions on the ETWS. Can sent response after discussion in R2-081929
- R2-081405: Reply LS to S2-075874 on Earthquake and Tsunami Warning System - (G2-080112; to: SA2,
SA1, GERAN, GERAN1; cc: RAN2, RAN3, CT1, SA3; contact: Telecom Italia) GERAN2 - no
RAN2 action requested - presented by Andrea Buldorini (Telecom Italia)
=> Noted
- R2-081406: Reply LS to G2-080112 and S2-075874 on ETWS (GP-080410; to: SA1, SA2; cc: RAN2,
RAN3, CT1, SA3; contact: Vodafone) GERAN - no RAN2 action requested - presented by
Assen Golaup (Vodafone)
=> Noted
- R2-081407: Reply LS to S2-075847 on Earthquake and Tsunami Warning System - (R3-080541; to: SA2,
RAN2; cc: SA1, GERAN2; contact: NTT) RAN3 - RAN2 action requested - presented by
Mikio Iwamura (NTT)
=> Response can be included in R2-081929; Noted
- R2-081916: Reply LS to SA2 to S2-075875 regarding ETWS Security (S3-080219; to: SA2; cc: RAN2,
RAN3, GERAN2, CT1, SA1; contact: NTT) SA3 - no RAN2 action requested - presented by
Mikio Iwamura (NTT)
=> Noted (primary notification could be several hundreds of bits)
- R2-081409: LS to establish working assumptions for the scope of responsibility for optimized handover
specification (C1-080779; to: RAN2, RAN3, CT4, SA2; cc: -; contact: ALU) CT1 - RAN2 action
requested - presented by Sudeep Palat (Alcatel-Lucent)
- Does not seem to be our area of expertise. Main input should come from SA2.
=> Noted without response.
- R2-081410: EPS Session management procedure optimisations - (C1-080780; to: RAN2, RAN3, CT4; cc: -
; contact: Ericsson) CT1 - RAN2 action requested - presented by Vera Vukajlovic (Ericsson)
- ALU thinks this is related to general aspect on NAS/AS interaction.
- Currently we don't allow to transfer multiple NAS msgs in one RRC message.
- Samsung wonders if there is any difference if the NAS messages are transported in
different RRC msgs: they might still end up in one TT1. Mot agrees that for the general
case they should not be concerned. However Mot assumes this is specifically about the
NAS concatenation with AS procedures (multiple RB establishment).
=> Can have response LS after NAS/AS interaction discussion in CP-session R2-
081930
- R2-081414: LS on Change Request for LTE TDD Frame Structure to TS.36.300 V8.3.0 - (R1-081112; to:
RAN2; cc: -; contact: RITT) RAN1 - RAN2 action requested - (note: R1-081112 arrived already
at the end of RAN2 #61 but was not treated there due to a lack of time)
=> CATT will provide an updated version for the next RAN2 meeting, which is written on the
latest version of the 36.300.

- R2-081415: LS on CR to TS36.306 - (R1-081125; to: RAN2, RAN4; cc: -; contact: NTT) RAN1 - RAN2 action requested - presented by Mikio Iwamura (NTT)
- There is an error in latest version of 306 on the #soft-channel bits for category 1. Rapporteur will make CR for next meeting
- => Noted (already included)
- R2-081416: LS reply to R2-075481 on NDI vs. RV - (R1-081138; to: RAN2; cc: -; contact: Panasonic) RAN1 no explicit RAN2 action requested - presented by Takahisa Aoyama (Panasonic)
- So for DL separate 2 bit RV, UL jointly coded.
 - LG asks if UL retransmissions will not change UL format like MCS ? Panasonic replies that same modulation scheme is used in retransmissions.
- => Noted
- R2-081417: LS on Redundancy Version Sequences for HARQ - (R1-081141; to: RAN2; cc: -; contact: NSN) RAN1 - RAN2 action requested
- => Noted (there are 3 inputs doc on MAC for this)
- R2-081418: LS on High Interference Indicator - (R1-081148; to: RAN3; cc: RAN2, SA5; contact: Ericsson) RAN1 - no RAN2 action requested - presented by Vera Vukajlovic (Ericsson)
- => Noted
- R2-081419: LS on L1-related parameters to be configured by RRC - (R1-081156; to: RAN2; cc: -; contact: Ericsson) RAN1 - no explicit RAN2 action requested - presented by Vera Vukajlovic (Ericsson)
- => Noted (contribution available for handling part of this information in our specifications)
- R2-081420: Reply LS to R2-080621 on RACH retransmission delay requirements - (R1-081160; to: RAN2; cc: -; contact: Ericsson, Panasonic) RAN1 - no explicit RAN2 action requested, no LS answer? - presented by Magnus Lindström (Ericsson)
- Chairman asked if the response to c) should be captured in our specs as UE performance requirements ? NTT DCM thinks Time to response to UL grant: RAN1. Time to retransmit the preamble in RRC.
 - Some confusion on what "minimum processing delay really means". We are also interested in the maximum processing delay. QC thinks the provided values could also be interpreted as the maximum delay. Panasonic also thinks this is a kind of maximum delay which we can use for our calculation on next RACH opportunity. Will offline check this with RAN1.
- => Ericsson will check what of c) will be captured in L1 specifications, and if there is remaining requirements that need to be captured in MAC, Ericsson will provide CR to next meeting. Might also need to sent an LS with further questions w.r.t. min/max UE processing requirement.
- R2-081421: Reply LS to R4-071813 on Signalling of additional spectrum emission requirements - (R3-080449; to: RAN2, RAN4; cc: RAN1; contact: Motorola) RAN3 - RAN2 action requested
- => Noted
- R2-081422: LS on RAN performance monitoring - (R3-08530; to: SA5; cc: RAN1, RAN2, RAN4; contact: NTT) RAN3 - no RAN2 action requested - presented by Mikio Iwamura (NTT)
- => Noted
- R2-081423: LS on Self Configuring and Self Optimizing Network Use Cases and Solutions TR - (R3-080536; to: SA5, RAN2, RAN4, RAN1; cc: GERAN2; contact: T-Mobile) RAN3 - no explicit RAN2 action requested
- => Noted
- R2-081435: LS reply to R2-081364 and R3-080530 on RAN Performance monitoring - (S5-080540; to: RAN2, RAN3; cc: RAN1, RAN4; contact: NSN) SA5 - RAN2 action requested
- => Noted: should wait for input from SA5 before continuing on performance monitoring related measurements.

- R2-081424: Reply LS to R2-075458, S2-080965 and R2-080605 on Applicability of “subscriber type” indication for UTRAN & GERAN - (R3-080543; to: SA2, RAN3, GERAN2; cc: -; contact: Vodafone) RAN3 - RAN2 action requested - presented by Assen Golaup (Vodafone)
- Question 1:
- Vdf thinks the intention was to also use for active mode. Tmob agrees. NSN thinks it is an implementation issue, but can be used.
- Question 2:
- Vdf assumes coordination is needed between service based handover information and subscriber type in order to avoid ping-pong as a result of both information parts. RAN2 has not studied detailed consequences.
 - Tmob thinks there is a different scope (subscriber type per UE, service based handover per RB).
 - TIM thinks that one approach would be that in case of clash, service based handover should have priority.
 - NSN does not see so much need for using the subscriber type in QOS management (already have e.g. QCI). But again implementation issue.
- => Response along these lines in R2-081931
- R2-081425: LS on LTE-cell- and eNB-identification - (R3-080547; to: RAN2, SA2, CT1; cc: -; contact: NSN) RAN3 - RAN2 action requested
- NSN points out that if we want to use the same identity over X2/S1 as on BCCH, then the BCCH identity probably needs to include an eNB id. Samsung thinks that if we include the eNB-Id, we would be including something like 12 bits extra,
 - NSN points out that we need to think about CSG's. CT1 will only meet after us. Are CSG's handled with a separate identity or included in this one identity.
 - Ericsson's understanding from the last meeting was that we were moving in the direction of TA + cell-id rather than eNB. In general we should limit the information in SIB1.
 - QC points out that since the UE does not read the GCID from the target, anyway the X2 handover needs to be handled based on the L1 identity reported by the UE. NSN thinks that there is a relation, because of ANR.
- => Response is deferred to next meeting
- R2-081426: LS on RLF Recovery Information over X2 - (R3-080553; to: RAN2; cc: -; contact: Nortel) RAN3 no explicit RAN2 action requested
- QC is wondering what is “RLF information” ? Does this concern an indication of “handover or re-establishment”. In Nortel's understanding, there is no such differentiation. So there is only 1 procedure over X2.
 - So if we prepare multiple eNB's, the source will select what handover command to forward.
 - So it would also mean that any handover preparation shall include the “Re-establishment MAC-I”.
 - NTT DCM wonders if this means that all targets have to reserve dedicated preambles if they want to use dedicated preambles for handovers ? If we don't discriminate, this would indeed be the consequence.
 - So basically we agree with the RAN3 assumptions and have only 1 preparation procedure.
- => Will see response in R2-081955
- R2-081427: LS on the necessity of Location Reporting procedure in S1 - (R3-080564; to: SA2, RAN2; cc: -; contact: NTT) RAN3 - RAN2 action requested - Mikio Iwamura (NTT)
- In previous CP discussions, it was clear that there are cases in which the UE needs to read the BCCH after handover (e.g. when change indication is received). So far, the UE does not need to read general system information immediately after handover. There are papers in this meeting that would require the UE to read SIB1 after handover.
 - Ericsson's understanding is that the majority of parameters would be sent in HOcmd. So far only the TA could be one reason to read BCCH in target. So what are other reasons to read system information in connected mode ? Motorola thinks that it is clear that the UE needs to read SIB2. Ericsson assumes that RACH requirements are sent as optional in HOcmd. Motorola think that the RACH parameters can change while the UE is in connected mode (BCCH change information). Ericsson thinks there is a difference between only reading on change, or always acquiring some system information.
 - Panasonic thinks that the UE always has to obtain the SFN in the target cell from BCCH.
 - NTT DCM points out that anyway, always the eNB will know.

=> Can respond based on discussions in CP-session in R2-081956

- R2-081428: LS on Measurements for self optimisation of cell selection/reselection parameters - (R3-080565; to: RAN2; cc: -; contact: NEC) RAN3 - RAN2 action requested
=> There is an input contribution on this. If we have the time to discuss this, we can respond. Otherwise from next meeting.
- R2-081429: LS to RAN 2 on mobility from E-UTRA to UTRA without explicit neighbour cell list - (R4-080458; to: RAN2; cc: GERAN; contact: Nokia) RAN4
- So for idle mode, we can remove the "full NCL" option for LTE->UTRAN. Will have a full NCL in connected mode.
- NTT DCM wonders if there is still a reason to list neighbours in the "non-full-NCL option". E.g. no individual cell offsets.
=> Noted (should be taken into account in updates)
- R2-081430: Response LS to R3-080472 on LS Automatic Neighbour Relation - (R4-080468; to: RAN3; cc: RAN2; contact: Ericsson) RAN4 - no RAN2 action requested - presented by Vera Vukajlovic (Ericsson)
=> Noted
- R2-081431: LS on Scale of Reported Measurement Quantities - (R4-080484; to: RAN2; cc: RAN1; contact: Ericsson) RAN4 - no explicit RAN2 action requested - presented by Vera Vukajlovic (Ericsson)
=> Noted
- R2-081432: LS on signalling Intra/Inter-frequency measurement bandwidth - (R4-080541; to: RAN2, RAN3, GERAN; cc: RAN1; contact: NTT)RAN4 - RAN2 action requested - presented by Mikio Iwamura (NTT)
=> Noted
- R2-081433: Reply LS to R2-075464 on RACH Optimization Use Case - (S5-080537; to: RAN2; cc: RAN3; contact: Huawei) SA5 - no RAN2 action requested
=> Noted
- R2-081434: Reply LS to R3-072401 on Automatic Neighbour Relation (ANR) function - (S5-080538; to: RAN3; cc: RAN2, RAN4; contact: Huawei) SA5 - no RAN2 action requested
=> Noted
- R2-081917 Response LS to RAN2 to R2-081369 on Authentication at RRC Connection Re-establishment (S3-080226; to: RAN2; cc: -; contact: Samsung) SA3 - RAN2 action requested - Note: There is an LS answer proposal available in R2-081765/R2-081699 - presented by Prateek Basu (Samsung)
- Should indicate that change of security algorithms is not supported, and ask if SA3 has any security concerns with that.
- MAC-I: SA3 assumes that the re-establishment message is the input for the MAC-I calculation. So no change to the algorithm. No SN is signalled but could be specified.
- Cell-Id: Ericsson assumes that we only have one *keNB derivation. In the handover case, the UE will only know the L1 id of the target cell. So then the *keNB derivation in the handover and re-establishment cases have to rely on the L1 id rather than the GCID.
=> Will see response in R2-081958
- R2-081918: Reply LS to R2-080601 on outstanding NAS messages - (S3-080229; to: RAN2; cc: RAN3, CT1; contact: Ericsson) SA3 - RAN2 action requested - presented by Magnus Lindström (Ericsson)
- Contribution R2-081200 is the missing attachment
=> Are contributions on this. Will see reply after these contributions are discussion in R2-081959
- R2-081919: Reply LS to R2-080540 on assumptions about UE security capabilities - (S3-080230; to: RAN2; cc: CT1; contact: Ericsson) SA3 - no explicit RAN2 action requested - presented by Magnus Lindström (Ericsson)
=> Noted

- R2-081920: Reply-LS to R2-080602 on security aspects on inter-system handover - (S3-080249; to: RAN2; cc: -; contact: Nokia) SA3 - RAN2 action requested
- ALU clarifies that HANDOVER TO UTRAN is not IP'ed because the integrity is only started by an SMC after the handover.
 - It seems true that for GSM->UMTS there are cases where the handover command is not at all protected.
 - However currently for LTE we have agreed that for intra-LTE there is no handovers before security has been started. So then it would be strange to have looser requirements for inter-RAT ?
 - ALU thought we had agreed on the restriction for intra-LTE, only for simplicity (only need to support 1 way).
- Handovers from E-UTRAN
- Ericsson thinks that the same argument can be used for inter-RAT handovers from E-UTRAN to other RAT's. ALU agrees with this. So they should only be executed after security has been started in LTE.
 - TIM thinks this could delay the handover. So if the alignment is the only reason, then we should also consider handovers before security activation.
 - NTT DCM assumes that anyway redirection before security activation is in line with SA3 assumptions.
 - Would also not gain that much if we have handover before SMC because anyway the UE capability is required.
- Handovers to E-UTRAN
- What about handovers to LTE ? It seems there are no problems to have handovers before security activation.
- => Will see outgoing LS in R2-081960 answering along these lines
- R2-081921: LS on CS Fallback - (S2-081993; to: RAN2, RAN3, CT1, CT4; cc: -; contact: NTT) SA2 no explicit RAN2 action requested - presented by Mikio Iwamura (NTT)
- Several contributions are available.
- => CP session can decide on response.
- R2-082014: LS on Half-Duplex FDD (R4-080805)
- Bullet d) seems to say that there are eNB's that only support HD. Ericsson thinks this could happen in case a band only supports HD.
 - In Ericsson's understanding, or each FDD band, a UE has to indicate whether the UE support FD of HD.
- => Noted
- R2-082024: Reply to LS on applicability of "subscriber type" indication for UTRAN & GERAN
- => Noted
- R2-082025: LS on E-UTRAN Neighbour Cell List information for GERAN
- => Noted

4.2 Stage-2 status

Only rapporteur input: potential rapporteur update proposals.

No input documents.

4.3 Identified issues

4.3.1 Multi-layer RACH modelling (including Msg3/4 failures)

An email discussion has taken place on this [Ericsson]. Are any updates required to e.g. RRC or MAC ? Does anything need to be clarified w.r.t. contention resolution in MAC/RRC (also take into account agreed company CR's to RAN) ? E.g. does Msg4 contain CCCH or DCCH ?

Retransmission modelling

R2-081464: Random Access Procedure modelling Ericsson (Rapporteur)

- R2-081569: RACH modelling Panasonic
- Still would like a counter in RRC.
=> Noted
- R2-081514: Multi-layer RACH model LG Electronics Inc.
=> Noted

Discussion

Proposal 4:

- Panasonic wonders if this means RRC can cancel a RA-procedure ? Ericsson confirms. The interaction is that RRC asks MAC to reset. Panasonic indicates that currently, cell reselection is only required to be supported on MAC RA failure. Ericsson thinks that at least for handover, we have this functionality already.

Question 1: *Need the size of the grant for contention-based access be fully dynamic or can we guarantee that a UE will always get the same UL grant size after contention based preamble for Msg3 for retransmissions (e.g. because the UE has to select a preamble from the same group for re-attempts).*

- Panasonic thinks we should limit: 1 size per preamble group. LG agrees with this.

Question 4: *Should higher layers (RRC/RLC) be involved in contention loss handling or should this preferably be kept in MAC?*

- Samsung thinks it would be simpler not to involve higher layers.
- Ericsson thinks that since the size of the grants does not need to vary, we can keep it at the MAC layer. Infineon shares this opinion.

What is Cond_R ?

- QC would not like to remove Cond_R yet, but would like to study this further.
 - Ericsson thinks we could try endlessly in MAC, but we should have an indication to higher layers when we have a certain number of failures. So Cond_R is not a termination condition but more a "failure indication". So also e.g. for the UL data case, RRC would be informed about the problem condition.
 - Samsung thinks MAC could stop after the failure indication rather than continuing. Ericsson thinks this is the same as the L1 losing sync. You still try to recover and don't stop immediately.
 - Infineon thinks we could have different cases in MAC: e.g. CCCH one handling, and other handling for connected state (MAC indicates RLF kind of condition).
 - QC indicates that at least for the DL data case we need a max-attempt counter in MAC. (= Cond_R). So why not keep it ?
 - Nokia wonders what the gain would be from having MAC endlessly retry ? Ericsson sees a benefit that backoff/power ramping is all handled in MAC.
 - We assume that max-attempt could be set to a sufficiently high value that no action has to be taken on that cell after this max is reached. (no re-attempts are needed).
 - Ericsson thinks if we go this way, max-attempts has to be quite high and then we don't have a natural point to trigger reselection.
- => Offline discussion invited (Magnus)

Question 2: *Is cell-reselection needed after each lost contention or only after Cond_R?*

- *With collision probability in the order of 10^{-2} , is the typical delay including msg3/4 much different from only power ramping? What is the probability of a much longer delay?*

=> Would take place after 1 (or more) error reports from MAC.

Agreements:

1. For all access cases, MAC performs RA procedure steps 1-4 (Preamble TX; RAR reception; Msg3 TX; Msg4 reception including checking contention resolution) until a condition Cond_R

is met.

2. MAC handles Contention Resolution timer for all cases; i.e., T300/301 are not needed.
3. RRC can trigger cell re-selection, at least before any retry on RRC level (if exists)
4. RRC can abort MAC RA procedure.
5. A UE shall only get 1 (cell specific) size per preamble group for the UL grant for Msg3 after a contention based preamble for retransmissions after contention loss.
6. UE shall select preamble from same preamble group after contention loss; if the UE obtains a different UL grant size, UE behaviour is not defined.
7. RACH re-attempts after contention failure shall be initiated by MAC.
8. After offline discussion the following was agreed
 - Align all cases as much as possible
 - MAC will try endlessly
 - MAC will report failure after preamble-trans-max
 - Should MAC indicate every preamble-trans-max as a failure to RRC or only the first time ?
 - So RRC will do the supervision of the RA attempts. FFS if this needs to be based on timer or counter.

Offline effort will try to go through all the different cases and a summary paper will be provide during this week in R2-082029. DL data arrival case should also be considered in this aspect (might be limited to preamble-trans-max as agreed earlier.

R2-082029: Random Access Procedure model

Section 2.1:

- It was clarified that it is modelled as MAC continuing endlessly, just to have the same behaviour in MAC for all these cases. In practise for this case MAC will be reset. So currently there is no timer for this case in RRC.
- It was questioned what trigger the MAC RA procedure in this case ? Currently the MAC RA is triggered before, and the CONN REQ is only given to MAC when the RA response is received.

Section 2.2:

- Panasonic wonders whether we agreed to have T310 in re-establishment ?
- Some errors in the RRC part.

=> Further comments can be made. Will see update in R2-082030

R2-082030: Random Access Procedure model

- Some details already in RRC could have been missed
- => Agree with principles from this document.
- => Both MAC and RRC rapporteur will provide a CR reflecting these principle for the coming meeting.

R2-081669: Multi Layer interaction modelling for connection CATT

Contention Resolution Id

R2-081686: Contention resolution modelling issues Samsung

- LG wonders why section 2.2. proposes to remove the preamble handling ? Ericsson agrees that everything is already specified in MAC so no need to capture in RRC. Only the signalling needs to remain in RRC.
- => Proposal 3 is agreed

R2-081787: UE id in RACH msg 3 and for contention resolution Alcatel-Lucent, Alcatel Shanghai Bell Proposal 2.1

- ALU proposes to use the complete MAC SDU for contention resolution, including RLC/PDCP headers. ALU agrees it is not the MAC SDU but the CCCH msg (48 bits).
- Ericsson clarifies that for handover complete, we will have normal MAC headers. So then it could become larger. However this case does not need to be considered because contention is handled by the identity on PDCCH.
- QC wonders if this first MAC SDU is fixed size ? ALU understand that the CCCH msg is fixed size and $80 - 8 - 24 = 48$ bits.
- Ericsson thinks that by just using the identity as in the Samsung proposal, you still have some spare bits in the 48bits, whereas in the ALU proposal all 48bits are used and no spares are left.
- QC thinks the Samsung proposal is easier to test.

- Samsung thinks that in the future we might still have larger CCCH message (because we have normal MAC headers).
 - Infineon like the ALU proposal.
 - ZTE wonders what happens with a field like “establishment cause” ? This will also be echoed back ? Will 48 bits always be enough ? ALU indicates that anyway we have agreed that the CCCH message has to be 48 bits.
 - Panasonic supports the Samsung proposal because RRC does not have to give the contention id to MAC separately. ALU clarifies that this is also not needed in the ALU proposal.
- => Agree on the ALU proposal in section 2.1.
- Proposal 2.2:
- ALU clarifies that only for service request we have to include the S-TMSI over S1. This is not required for the other cases because it would be included in the NAS msg. However ALU proposes not to optimise this further.
 - RAN2 issue is that we will not provide information in Msg5 to discriminate between these cases. The rest is not our concern.
- => We confirm proposal 3 (nothing in RRC today in Msg5 to allow discrimination).
- => ALU will check if this needs to be indicated to other groups by LS. After investigation, ALU thinks no LS is really needed.

Other

R2-081638: Power loop handling at backoff Samsung

Late/not available

R2-081583: Proposal for the RACH modeling Infineon

4.3.2 Handover/Reconfiguration failure handling

Several issues were addressed at RAN2#61, however still several issues are remaining a.o.:

- *What is CondA?*
- *With what configuration does the UE enter cells in case of handover failures before CondA?*
- *Best cell selection after handover failure: how does it work (high level: e.g. what type of restrictions)?*

What is CondA?

R2-081488: CondA for Handover Ericsson

- “successful RA procedure” i.e. A3/A6
- TI wonders whether it is clear what a “successful RA procedure” means ? Ericsson clarifies that it is when RA procedure terminates successfully.
- Motorola wonders about A6/A6; why is it requiring more signalling ? Motorola assumes an RLC-ACK would always need to be sent in the handover case. Ericsson agrees with the RLC-ACK, but it might not come immediately. Ericsson’s main concern is that it would be an additional condition in RRC (L1 has to indicate to RRC). So you would have 2 indications: RA completion and PDCCH reception.
- QC thinks that in case of dedicated preamble, there could be the case that Msg2 is succeeded, but Msg3 might be lost to NACK->ACK. So QC thinks that Msg3 loss should be covered.
- NTT DCM clarifies that the CondA is not a successful handover, but it is the point in time when the UE does not return to the source cell configuration. RLC-AM can perform retransmissions for the handover complete.

R2-081570: Handover procedure and failure handling Panasonic

- Proposes A3/A3.

R2-081806: Remaining issues related to Handover Failure handling Motorola

- Proposes A6/A6
- Chairman wonders why in non-contention case, cells could not be prepared at A3 ? Preparation should be possible after the eNB having received the dedicated preamble ? Motorola is not sure if the target eNB has sufficient information to prepare other cells.
- QC thinks that maybe the target eNB needs to rely on receiving the integrity protected handover complete message before starting to prepare other cells. So using A6 for this case also ensures this.

- R2-081513: Handover failure issues Samsung
=> Same as Motorola proposal: noted.
- R2-081731: Handover failure handling NTT DoCoMo, Inc.
=> Updated in R2-081924
- R2-081924: Handover failure handling NTT DoCoMo, Inc.
=> Aligned with Ericsson opinion.

Discussion:

- It seems all the alternatives probably work
- Panasonic thinks the key issue is if the eNB can allocate data when eNB receives dedicated preamble. If this is possible, A3 should be applied for dedicated preamble case. If this is not possible, then A6 should be used. At least in our delay calculations we have assumed that you could schedule the UE when you detect the dedicated preamble. Then Panasonic thinks we need to set A3 for dedicated preamble.
- NTT DCM agrees it would not be nice if the UE would have to be able to revert to other cell after having established the user plane. However the target eNB has to ensure that the UE has applied the correct TA, and that can only be ensured when receiving Msg3. Ericsson assumes a UE would not respond to grants before having received/applied the TA from Msg2. So you could schedule the UE before receiving Msg3.
- LG has a strong preference for 2 and 3 because they think they are simpler. Does RAN2 really want different conditions for both cases? People should take this into account when indicating support. TI clarifies that anyway the MAC RA procedure terminates differently.

Three options:

- 1) When RA procedure succeeds (A3 in non-cont case /A6 in cont case) [5]
- 2) A6 / A6 [9]
- 3) A3 / A3 [1]

=> Proposal 3) is removed. Will come back tomorrow to decide between 1) and 2).

- Continuation on Tuesday:
 - 1) When RA procedure succeeds (A3 in non-cont case /A6 in cont case) [7]
 - 2) A6 / A6 [5]
- Motorola wonders if we could allow both behaviours ?

Agreement

- 1) Cond_A is met when RA procedure succeeds (A3 in non-cont case /A6 in cont case)
So MAC gives indication of RA completion to RRC, and RRC will stop handover failure timer.

=> RRC and MAC rapporteur will take this into account.

What configuration does the UE assume in case of handover failure before CondA ?

- R2-081549: Handover failure handling Qualcomm Europe
- Term "persistent" should probably not be used here (nothing to do with persistent scheduling). What is meant that e.g. L1 configuration is lost, but MAC/RLC/PDCP configuration is remaining.
- R2-081623: RRC re-establishment procedure ZTE
- Proposes before CondA UE has both configurations, and when the UE comes back to the source cell, the network can tell the UE to resume the configuration of the source cell.
 - If the UE would go to the target cell, the target cell can indicate to the UE that he can resume the configuration of the target cell.
 - Nokia asks what the configuration the UE uses when it selects another cell (prepared cell) ? Would such a cell not only be aware of the source cell configuration ? ZTE replies that another prepared cell would indicate to the UE to use the source configuration.
 - When asked, there was no support for doing something more complex than just reverting to the source cell configuration.
 - Ericsson clarifies that even in the target cell we can only use the source cell configuration, because the target cell would not know if the re-establishment is before or after the handover command was received.

Agreements:

- 1) When handover failure occurs before Cond_A, the UE will revert to the configuration of the source cell.

We still need to specify in detail what part of the configuration is restored (e.g. probably higher L2), and what part of the configuration is lost (e.g. parts of / complete L1 configuration).

=> Will be captured by RRC rapporteur

Radio Link Failure monitoring/Timer handling

R2-081570: Handover procedure and failure handling Panasonic

Section 2.2

- QC wonders what a "cell search" is in case of blind handover: the UE will know L1 identity and frequency, so the UE can just check the corresponding PSC/SSC. So why so much time ? Panasonic thinks that this is due to the fact that the UE still has to find out the timing. So it is a kind of reduced cell search. Samsung assumes this procedure will be very quick and should not cause much difference in timing. Panasonic thinks this will depend on how good the quality of the target cell is. This could be up to several 100ms (RAN4 requirement).

=> People can think about whether we need 2 values for the handover failure timer in RRC, or whether 1 is sufficient.

Section 2.3

- Motorola wonders whether there is really a large value to detect the radio link failure detection before CondA ?

R2-081806: Remaining issues related to Handover Failure handling Motorola

- Section 2.3; mainly proposals 5a-5c
- Proposes to only start RLF monitoring after CondA

R2-081449: Mobility Failure Handling Alcatel-Lucent, ASB

- Basically aligned to the Motorola proposal on the RLF monitoring

R2-081865: Radio Link Monitoring during Handover LG Electronics

- Aligned with the proposal from Panasonic.

Discussion:

- After offline discussion:
 - Most companies seem to think that radio link failure monitoring will only start after Cond-A.
 - This was based on the assumption that anyway typically $T304 < T310$; so even if they would be running in parallel and detect RLF problem detection quickly, T310 will not expire before T304.
- ALU clarified that they agree with the proposed way forward, because would only like to have 1 timer running.
- Samsung asks who starts/stops radio link failure monitoring ? Is it RRC ? Agree that in the model, L1 can continue to monitor and report failures, but RRC will only start T310 on failures reported after Cond_A.

Agreements:

- 1) T310(if running) is stopped at handover
- 2) In the target cell, only after Cond_A detected radio problems shall trigger T310
- 3) On expiry of T304 (handover failure), T311 is started

=> Will be captured by RRC rapporteur

Best cell selection

R2-081549: Handover failure handling Qualcomm Europe

- UE should already have good measurements on source frequency.
- TI wonders whether it is possible to reselect to a cell on the same freq but of a different PLMN ? QC assumes that the current PLMN would be selected in the PLMN selection. Nokia assumes that anyway the UE has to select the best cell on the frequency.

- TI would like to restore quickly and thus go to the source cell irrespective of quality on the source frequency (deterioration should not be that large).
- NTT DCM wonders what T304 would be ? TI is assuming < 100ms (based on service interruption). NTT DCM assumes a longer values is required in order to avoid to large handover failure rate (e.g. RACH attempts).
- QC thinks that still "best cell" should be followed. Selecting a different PLMN would not be a typical case.

R2-081643: Recovery after handover failure in target cell HUAWEI

- Ericsson wonders why the target cell should not be a candidate ? Seems not in line with assumptions so far (best cell).
- Proposals 2 and 3 are alternatives.
- Ericsson wonders if it would not be strange to limit to the source cell NCL when the UE could be going anywhere ? Nokia indicates that already today we have the "stored information cell selection" (what every UE has, normally based on previous measurements) in the UE. So Nokia wonders if the proposal is to re-use the "stored information cell selection" as specified in 304 ? Huawei indicates this could be one alternative.
- Huawei would even be happy to have re-establishment through going via IDLE. At least Nokia agrees that we should not optimise this to much.
- Ericsson thinks if we re-use the "stored information", it seems quite implementation specific. Can any cell the UE found be used ? Or are certain cells excluded ?
- Motorola does not understand how the NCL could be used since we don't have a whitelist ? Motorola thinks whether we use the stored information or measure again could be a UE implementation issue.
- Infineon agrees with Huawei that it would be good to somehow try to increase the probability that the UE goes to a prepared cell. But if we go to an IDLE type of cell selection, then we might as well go to IDLE. Infineon would like only to try to source cell and otherwise go via IDLE.

R2-081924: Handover failure handling NTT DoCoMo, Inc.

- Section 2.4.
- NTT DCM thinks we should try the source frequency first, assuming that when going to the source cell frequency also the source measurement configuration is restored.
- NTT DCM thinks it is important to also considered inter-RAT. If in step 3 a suitable cell on another RAT is found, the AS goes to IDLE and NAS is triggered.
- QC wonders if there is really a difference with going to IDLE after step 2 ? NTT DCM agrees that there might not be so much difference, and going to IDLE after step 2 is probably ok as long as this is not seen by the user.
- Nokia clarifies that if we would do "stored cell selection", it is also specified that after this fails the UE will revert to initial cell selection.
- NTT DCM would like not to wait T311 to search for other RAT's (T311 could be e.g. 30s).
- Infineon repeats that in general it might be much easier to try one safe try (source cell) and otherwise go via IDLE. Huawei agrees to this.
- For NTT DCM the most important thing is that the UE is not aware of the failure. So AS or NAS should try to continue the connection.
- Infineon indicates that it is already agreed that GBR bearers are preserved in case of radio link failure (contexts remain so user sees no direct impact).
- Motorola agrees that going to IDLE can be hidden from the user.

R2-081806: Remaining issues related to Handover Failure handling Motorola

R2-081837: Cell selection after handover failure LG Electronics Inc.

Discussion:

- Samsung wonders if this will be a procedure specifically for the handover failure, or in general for the radio link failure ? Samsung thinks that one benefit of going with stored information, then it could be useable in all cases.
- Nokia thinks that it does make sense to prioritise one or the other (source/target) and the UE should use stored information which could lead to either source or target (or something else) based on radio conditions. So why not normal best selection.

- Ericsson would like to have a bit in the handover command to indicate whether source or target frequency should be attempted after failure. Motorola would prefer not to have additional options. Ericsson thinks in case of load balancing the UE could go back to source freq, but in case of a coverage problems the UE might stay on the target freq.
- The only motivation for specifying more UE behaviour than best cell selection seems to be to support other cell preparation.
- Panasonic would prefer not to have different handling.
- QC would prefer not to have target freq in the cell selection. Stored information will say that the target cell is the best cell on that freq. Motorola thinks you could still continue measurements during the process so the best cell could still change.
- Ericsson wonders what happens in case of blind handover ? UE still has to sync to the target freq. and might get some more measurements on target freq. However anyway it should have good measurement results on the source freq.

Should we prioritise the source frequency ?

=> After offline discussion decided that this is not needed.

FFS if going to IDLE before T311 expiry should be allowed (general issue, not specific to handover), e.g. when all E-UTRAN cells are attempted

=> In offline discussion, it was proposed to allow inter-RAT reselection before T311 expiry, but only after the UE has tried to find a suitable E-UTRA cell. T311 does not limit this. If the UE finds a suitable inter-RAT cell during T311, the UE will go to RRC-IDLE and rely on NAS to take action.

Agreement:

- 1) After T304 expiry, the UE first shall look for a suitable E-UTRA cell
- UE will use stored information on E-UTRA cells. UE will normally have results from source and target frequency, so it is quite likely that the UE would end up on one of these two.
- 2) If no suitable E-UTRA cell can be found, the UE is allowed to perform inter-RAT selection even before T311 expiry (i.e. T311 does not forbid inter-RAT reselection). FFS if there would be other constraints that limit inter-RAT reselection
- 3) If the UE performs inter-RAT selection before T311 expiry, the UE will go to RRC-IDLE in LTE, and NAS will have to initiate appropriate action to continue.
- 4) Same approach can be followed for RLF.

- Nokia proposes to handle agreement 1/2 as a "new type of cell selection" that RRC can refer to. Panasonic wonders what is really different ? Nokia thinks it could be captured inside existing cell reselection, so stored configuration started from E-UTRAN frequencies.
 - Samsung wonders how much effort the UE has to do to find a suitable E-UTRAN cell ? The UE shall try to find a E-UTRAN cell.
 - Ericsson wonders if this means that if a user goes into an elevator and does not find anything, when coming out before T311 expires he is allowed to go to an inter-RAT cell directly ? NTT DCM thinks this is indeed the resulting behaviour which should be ok.
 - The frequencies to consider would be the frequencies for which it has information in its stored configuration.
 - Motorola would prefer to capture this in RRC since it is connected mode behaviour.
 - Samsung wonders if the same procedures are also applied in RLF case ? NTT DCM thinks the same procedure can be used for RLF. QC agrees to this.
 - ALU wonders if this would lead to much more frequent inter-system changes ? Motorola thinks this is the same as we have in UMTS today. During T317 you look for a suitable cell from either UMTS (cell reselection) or another RAT (go to IDLE). ALU is thinking about the fact that we have signalling free mobility for IDLE mode, but not for connected mode.
 - Ericsson wonders how this related to the priorities the UE has ? Nokia clarifies that it is already stated in 304 that for cell selection, priorities are not considered.
- => Will be offline effort to come to CR's for 36.304/36.331. Will be seen in R2-081988 (36.304) and R2-091989 (36.331).

Return Friday:

- Offline it was agreed that connected mode cell selection will be described in 36.331. (R2-081988 is withdrawn).
- R2-081989: Draft TP on Cell selection upon connection re-establishment
=> TP is agreed to be included in rapporteur's CR (see R2-082050).

Other

- R2-081571: RLC handling in RRC connection re-establishment Panasonic
- Samsung supports both proposals.
 - W.r.t. proposal 2, Ericsson wonders why reset before you try to sync on the target cell ? Ericsson would prefer not to limit further enhancements. So the Ericsson proposal would be to reset when access on target cell is attempted (transmission of preamble). Panasonic wonders what kind of future enhancement is considered ? Ericsson is thinking e.g. in case of access to a 20m-RACH-cell. Then we could still allow access in the source cell up to that time.
 - Ericsson thinks that already in Rel-8, a smart UE implementation should be allowed to only reset RLC when he starts to access the target cell.
 - NSN thinks this is mainly an implementation issue. The UE shall reset the RLC before using RLC in the target cell.
 - LG thinks we should consider optimisations for intra-eNB handovers. Panasonic assumes that anyway security is an issue.
- => Will consider the second issue an implementation issue. At least the UE has to do it before using RLC in the target cell.

Agreements:

- 1) Reset RLC for DRB's in case of re-establishment
=> Will be included by RRC rapporteur

- R2-081863: SFN reading at handover crossing async-sync cell boundary LG Electronics
- It was clarified that the transit cells with 10ms RACH timing sync to the sync area. Then no further enhancement seems necessary (just deployment issue).
 - Since the transit cell has 10ms timing, the UE does not need to know if the cell is synchronised or not.
 - Ericsson/QC think no further alignment is needed.
- => Seems to be a deployment issue.

4.3.3 Use of PDCP for RE_ESTABLISHMENT message

During RAN2#60bis, RAN2 decided that PDCP is not applicable to CCCH. As a result, PDCP will not be used in Msg4 (as well as Msg3). At RAN#39 the contention resolution was moved to MAC. As a result, does Msg4 contain CCCH or DCCH (see 4.3.1)? Does this cause a need for reconsideration on the use of PDCP in Msg4 ?

- R2-081550: RRC Connection Re-establishment procedure Qualcomm Europe
- Motorola wonders what what the HFN is when we would use PDCP ? Is it set to zero ? If it is always zero, Motorola thinks this could be an "security issue" because the UE could try multiple times in the same cell.
 - Samsung reminds people that currently we have agreed to not change security. ALU has the same comment.
- R2-081572: PDCP for RRC connection re-establishment procedure Panasonic
- Proposal 1:
- Nokia indicates that Stage-2 indicates that DCCH is applicable when you have an RRC connection. We don't have RRC connection now, so it cannot be DCCH unless we change the definition in Stage-2.
 - Samsung thinks that CCCH is when RRC is resolving the addressing (everybody has to receive the message to find out if he is the one addressed), and it is DCCH when you know before looking at the message that it is for you (dedicated message).
 - Motorola wonders if it is still SRB0 ? Panasonic confirms they want to keep it on SRB0 and still RLC-TM.
 - NSN points out that so far we have no RLC-TM on DCCH.
 - Samsung thinks re-establishment re-establishes SRB1 so it cannot be used in the DL yet.

- QC thinks if we use SRB1 in DL for re-establishment, we need to have a default RLC-AM configuration (which is fine for QC). QC thinks that SRB1 could be always hardcoded to 1 default configuration.

R2-081733: Handling of RRC Re-establishment message NTT DoCoMo, Inc.

- NTT DCM is not 100% confident anymore whether this proposal makes sense.

Discussion:

PDCP for re-establishment message ?

- ALU still fails to see the motivation. There is no change of algorithm. So a fake UE could break the communication, but anyway the UE would discover immediately afterwards.
 - Motorola agrees with ALU. Also Ericsson thinks it is not essential. Nokia agrees with this.
 - QC thinks that since we included RB information, then we normally have integrity.
 - Ericsson clarifies that currently the assumption is that subsequent reconfigurations would re-establish the RB's. The re-establishment message only re-establishes SRB1.
 - QC explained that at least they would like to have delta configuration for all RB's, and skip the subsequent reconfiguration message.
 - Infineon wonders how many TTI's are really gained ?
 - Infineon does not see a good motivation to have it.
 - Nortel supports the QC optimisation of avoiding the reconfiguration.
 - Samsung thinks we already had this discussion before. Then we decided to go for a simple 2-step approach.
- => Current working assumption is 2-step approach
- For the usage of RLC-TM or RLC-UM, NTT DCM wonders if we should not consider the size of the message ? Samsung thinks that we have seen contributions showing that there should be no problem with the size limitation (could use up to all RB's).
 - QC thinks that for now we can stay on RLC-UM. We should be able to revisit if we have a better idea on the Msg4 size.
 - Ericsson thinks we could consider to send the re-establishment on either SRB0 or SRB1: SRB1 would be used if there is no change in configuration and also ciphering would be applied.
 - Infineon asks how the UE could differentiate SRB0 or SRB1 ? This should be possible to differentiate from the MAC header.
 - Infineon thinks we should not re-open optimisations.
 - Panasonic agrees we should not unnecessary re-open, but Panasonic agrees that now we could indeed use SRB1 potentially.
 - QC agrees that there is no strong motivation for PDCP for re-establishment, and QC is fine with the 2-step approach.

Agreements:

- 1) No strong motivation to have PDCP for re-establishment message
- 2) RRC CON SETUP, RRC RE-ESTAB or RRC RE-ESTAB REJ should all be sent on SRB0
- 3) For the moment we keep SRB0 on RLC-TM, unless we find problems in the future
- 4) For the moment no reason to change from CCCH (only modelling issue)

4.3.4 Security

Most security issues have some impact on CP as well as UP. These issues should be submitted under this agenda item. E.g. inter-RAT security handling is still quite unclear.

IDLE->ACTIVE

R2-081494: KeNB derivation at Idle to Active transition Ericsson

- (related to LS in R2-081959)
- NSN wonders based on what criteria the UE would ask for a new RRC connection ? Ericsson thinks it would be based on NAS sending a new service request.
- Samsung wonders if this is not a bit strange solution: there is no problem with the UE but still it needs to start a new RRC connection ?
- Chairman wonders if there is a release of the RRC connection. Ericsson is open to that but it is not really needed (eNB would realise it is a new connection for the same UE).
- Ericsson assumption is that RAN3 decides that the NAS message in the RRC CONNECTION SETUP can only be sent in an INITIAL UE MSG over S1.

- The impact of this proposal on AS is that we could receive a connection request when we already have a connection.
 - ALU is not comfortable with a solution with UE autonomously establishing a new RRC CONNECTION on some timeout. The probability of S1 going down is very low. So probably this is a congestion case and the suggested UE behaviour would just make things worse.
 - NSN thinks that an example in which it would not work is the case when authentication parameters are not established yet. So the MME cannot verify quickly that it is the same UE and would still continue work with the first connection as well. Motorola thinks the reception of the authentication message would already stop the NAS retransmission timer.
 - Chairman remarks that the alternative is probably to indicate an SN in the DL message.
 - NSN preference is to have an SN in the DL msg.
 - Ericsson thinks it is a very rare error case, so it would be a waste to include always an SN for this. Infineon would also prefer the inclusion in the DL msg. ALU would also prefer the DL SN approach.
 - QC also prefers the solution with the SN.
 - NSN thinks that if the overhead is a problem, we could limit the SN echoing to some LSB bits.
 - Ericsson thinks that it would work even without any change, since the SMC would fail (msg ignored). So then NAS would repeat and the next SMC could succeed.
 - Ericsson wonders how long the UE waits for an SMC after RRC connection establishment. Samsung indicates that previously we have discussion that when the UE reports SMC failure, typically the eNB should release the connection. Then NAS should repeat the NAS service request.
 - ALU indicates that currently the NAS service request is not repeated. So in this case there should not be a problem of what SN to use. The problem should only arise in the ATTACH or TAU cases.
- => Have identified 2 solutions:
- 1) Rely on today AS behaviour: on SMC failure (due to SN "confusion"), UE reports error to eNB and eNB releases the RRC connection. Rely on NAS repetition for a new RRC connection.
 - 2) Echoing some part of the SN in the response message
SA3 can take decision

Inter-RAT to E-UTRAN

R2-081493: KeNB derivation at Inter-RAT handover Ericsson

- (related to R2-081960)
- Samsung wonders how large the random nr would need to be ? The overhead might be small if the number is small. Ericsson thinks any size increment is leading to a reduced size.
- Ericsson thinks SA3 is inconsistent: previously they indicated that it is ok to stay with the UMTS security for 30s (as previously indicated), and now they want to add a random nr.
- ALU thinks we should first understand why SA3 asked for a random nr.
- Main thinking from Ericsson is that after handover failure, anyway after the next entry (succesfull), a new AKA could be run in LTE within 30s and this should be secure enough.

R2-081763: Security in Inter RAT HOs to E-UTRAN Samsung

=> Will sent an LS to SA3 indicating the consequences of the decision to SA3, questioning whether the support of a random nr is really required, and if still required one option would be to sent random_nr via the target eNB.

Re-establishment

R2-081699: Security handling during RLF Alcatel-Lucent

Section 2.1

- 2.1 already handled as part of the response email discussion

Section 2.2

- Motorola wonders since the UE would get a new C-RNTI, would it not automatically also have a new KeNB ? ALU agrees that this would be a different possibility.
- So today the UE behaviour is exactly the same when the UE enters the same or a different cell.
- Ericsson clarified that with this proposal, since RLC is reset and PDCP will not recover, you could loose data. ALU agrees.

- Motorola wonders whether we all agree that a new KeNB will be used on RLF recovery in the same cell ? ALU is fine with this assumption. ALU will check if this needs to be clarified in the specs.
 - NTT DCM wonders in general whether at RLF the PDCP COUNT will always be transferred to the target eNB. Re-establishment today is based on normal preparation procedures.
- => One behaviour for re-establishment regardless of which cell to re-establish in. So e.g. new KeNB.

R2-081765: Response LS to WG SA3 LS S3-080226 Samsung
=> Noted

4.4 L1/2 control in RRC

4.4.1 General

Contributions on general aspects related to the introduction/handling of L1, MAC, RLC and PDCP parameters in RRC.

R2-081898: eNB knowledge of HD-FDD UE capability Nortel => Moved to 5.1.1.10

R2-081670: Discussion on RB mapping info CATT => Moved to 5.2.1.2

4.4.2 L1

Layer 1 parameter handling in RRC. Including results of email discussion on handling of L1 parameters in RRC connected state (i.e. connection establishment, handover,...) [Ericsson].

- R2-081484: Summary of the email discussion on Layer 1 parameters Ericsson (Rapporteur)
- Samsung points out that their assumed general framework is shared/common channel configuration is in SIB2, with some urgent info in MIB. So SIB's would be created according to functionality. Do we want to change from that now ? E.g. include shared/common channel configuration in SIB3 ?
 - Ericsson thinks this approach should be continued, with SIB3 containing cell reselection information.
 - Samsung thinks that maybe the distinction between SIB3 and SIB4 is not so clear at the moment (SIB3 should only contain serving cell info).
- => Noted: Will continue this email discussion, possibly based on new input from RAN1.

EMAIL
DISC

- R2-081483: L1 parameter handling in dedicated signalling Ericsson
- Current assumption is that SIB1 and SIB2 are read before connection establishment/re-establishment. This should still be reflected in RRC.
- Proposal 2:
- It was proposed to consult RAN1 on this issue. Ericsson wonders why in MIB ? It was clarified that this can resolve a "chicken and egg problem". Ericsson wonders what is meant by this ? If SIB1 is transmitted in any subframe this might indeed be needed. If it is only transmitted in subframe5 their might not be a problem.
 - CATT thinks that the UL/DL allocation will influence the PDCCH configuration in subframe 5. Ericsson thought it was only the PHICH structure that was impacted.
 - Nokia thinks it could be indicated in SIB2 or SIB3 for efficiency reasons. It would only cause some unnecessary PDCCH receptions in UL frames.
- => Can add question in LS if not clear from offline discussions.
- Proposal 6:
- Ericsson brings the question whether we want to use the handover command or a subsequent reconfiguration message if we want to change the antenna configuration to anything else than the default ?
 - Nokia wonders if whole codebook restriction is needed ?
 - QC thinks it would be less than 64 bits.
- Proposal 7/8:
- Samsung thinks we should also ask RAN1 about the feasibility of having a default transmission mode ? Ericsson assumes we can only use Tx-div at connection establishment.

- Panasonic thinks “same configuration” should not require full signalling.
- Proposal 10/11:
- Motorola wonders why this is not in SIB1 or SIB2 ? Ericsson thinks it is only needed when you want to measure on neighbouring cells. Ericsson thinks inclusion in connection establishment / handover command is dependant on performance benefit. Motorola thinks this should not lead to mobile requiring to read SIB3.
 - We should ask RAN1/4 how important this neighbouring cell configuration is. Dependant on reply we can include in connection establishment/handover command or include it in SIB2 LS TO RAN4 in R2-081987
 - Nokia thinks it could also be provided in measurement configuration in connected mode.

Proposal 12:

- In Samsung’s understanding this is for the measurement of the serving cell. So this is also related to the previous subject. Samsung thinks without this information measurement performance could be sufficient. Samsung would prefer a lower priority SIB.
- Ericsson clarifies that if the UE does not have this information, it will try to decode PDCCH for broadcast unnecessarily in MBMS frames. Nokia agrees it causes some additional power consumption but they don’t see a major consequences on this. It might also depend on how large the information is.

Section 4:

- Samsung thinks that we need to look more at the structure of the resource configuration. Samsung would prefer not to have too many different versions of the same IE. So if there are restrictions, maybe we should specify some network restrictions.
- Ericsson’s point is that today it is allowed to include this e.g. in CONNECTION SETUP. So do we want to allow this or forbid this (e.g. PUCCH configuration for SR in connection setup) ? Similar question for handover command.
- NTT DCM wonders why we would not allow this. Ericsson thinks at least if we want to do these things, we need to have test cases.

Agreements:

1. Proposal 1: Bandwidth related information does not need to be signalled during connection establishment.
2. Proposal 4: During hand-over it should be possible to include DL/UL-assignment (in most cases will not differ between different cells) and Special subframe patterns (which is more likely to vary) in the RadioResourceConfiguration part of the message triggering hand-over as optional.
3. Proposal 5: For connection set-up there is no need to signal DL/UL-assignment, Special subframe patterns as they are available from system information
4. Proposal 6: Include Transmission mode and Codebook subset restriction as optional in the message triggering hand-over including RadioResourceConfiguration IE that carries physicalChConfiguration. So we can possibly fallback to default, continue or change.
5. Proposal 8: Liaise RAN1 ask about the feasibility of and to define default transmission mode (e.g. transmission mode, transmit diversity). Could potentially be multiple defaults (e.g. one for 2 antennas, one for 4 antennas).
6. Proposal 10: Include Neighbor-cell configuration in SIB3 of system information.
7. Proposal 13: Include P_B in SIB2 of system information.

=> Ericsson will provide CR for next meeting including these changes.

- Samsung wonders how this CR will look: at what level will optionality be possible ? Ericsson would like to continue this aspect as part of the email discussion.

R2-081555: Rank/CQI configuration for Handover Texas Instruments Inc.
=> Noted (will be considered in continuing email discussion)

R2-081821: Number of PRACH per subframe Qualcomm Europe
- Ericsson would prefer to base this on a parameter list from RAN1. For this specific case, it is the Ericsson assumption that this is already part of the “PRACH configuration IE”.
=> Agree on the proposed name change

4.4.3 MAC

MAC parameter handling in RRC. For parameters where discussion/functionality is still in early phase, please submit under 5.1.1.9.

- R2-081726: Configurable parameters in MAC MAC Rapporteurs (Ericsson, Qualcomm Europe)
- Panasonic wonders why some semi-pers parameters are listed under HARQ and not under semi-persistent configuration ? No intention.
 - Samsung wonders whether in all specifications we could use the same naming as in RRC. Can be considered. Rapporteurs can discuss this.
- => Proposal is to have an email discussion up to the next meeting in which a proposal is discussed on what parameters/values to include in RRC. The target of the email discussion would be to come to an RRC CR. EMAIL DISC Magnus

4.4.4 RLC

RLC parameter handling in RRC. For parameters where discussion/functionality is still in early phase, please submit under 5.1.2.6.

4.4.5 PDCP

PDCP parameter handling in RRC

- R2-081480: Exclusion of invalid PDCP Profiles configurations LG Electronics Inc.
- Ericsson agrees that something needs to be done, however Ericsson thinks we could list the profiles as un UE capabilities, and if 2 are signalled for the same 8 LSB's, the highest value is applied.
 - LG thinks this proposal is preferable because it avoids this type of behaviour due to coding.
 - Ericsson would prefer the reformulated rule because it would also be applicable for future profiles as well.
 - Samsung prefers not to reflect to many constraints in the ASN.1 to avoid unnecessary network behaviour.
- => Will instead have an INTEGER (16 bit range), and add a note in the PDCP field description that if 2 profiles with the same 8 LSB's are signalled, only the profile corresponding to the highest value should be applied.
- R2-081586: PDCP SN size for UL and DL LG Electronics Inc.
- Ericsson wonders if there was really an intend to have DL or UL only UM bearers.
 - Ericsson thinks this is a tiny tiny optimisation.
 - NSN also thinks this is a very small optimisation
- => Noted (not much support)

4.5 Other (unicast)

Any other unicast issues that should be discussed commonly between CP and UP ?

- R2-081489: Synchronized RRC re-configuration Ericsson
- Ericsson is particularly concerned about MIMO reconfigurations
 - QC wonders how often it is expected to perform these L1 reconfigurations ? Ericsson things e.g. after every RRC CONN SETUP, starting in Tx diversity and reconfiguring to a closed loop mode. However also in case of "going around the corner" when the radio propagation conditions become very different.
 - Samsung wonders if there would be special failure handling for this case ? Ericsson does not foresee any special behaviour.
 - Huawei wonders where in the RACH procedure you would apply this new procedure ? Is a complete RACH procedure attempted with multiple attempts ? Ericsson assumes a complete RA procedure with a dedicated preamble
 - Motorola wonders what is new from the discussion we had at the last time ? Nothing is really changed: Ericsson would like a more efficient approach then just intra-cell handover.
 - Motorola thinks we already concluded that there were sufficient mechanisms available.
 - Ericsson thinks this could happen more often than an cell change.
 - Motorola wonders why relying on the HARQ ACK is not sufficient ? Ericsson explains that we have not agreed that the HARQ ACK has to be sent with the old configuration (format change of ACK/NACK signalling)
- => Email discussion on reconfiguration solution that is sufficiently good to change the MIMO configuration EMAIL DISC Email discussion should start from why current solutions are not sufficient, and how often this is actually expected to happen in real networks.

- R2-081448: Some Issues Related to Half Duplex Operation NextWave Wireless, IPWireless
- Ericsson indicates that RAN4 has discussed this earlier this week, and it seems they have concluded that for each band the UE shall indicate whether it supports half-duplex or full-duplex. So in the Ericsson assumption there would be no half-duplex bands. An LS is being prepared by RAN4.
 - In Motorola's understanding, only some band support half-duplex.
- => Noted; IPW will check if the planned RAN4 LS handles this sufficiently.
- R2-081526: Consistent AMBR Concept Ericsson, Nokia Corporation, Nokia Siemens Networks
- IPW indicates they had a contribution previously considering this case, and the conclusion was we would not do anything. IPW thinks without this we do not support a combination of VPN and public Internet sufficiently ?
 - NSN thinks there is quite some additional complexity if we would like to support this. NSN thinks with different PBR's / different priorities we have already quite some tools available.
 - If you really want to do it accurately, Ericsson thinks you have to involve the UE. We would e.g. have to change the RLC priorities dynamically.
 - IPW thinks this is difficult to introduce later.
 - Motorola wonders if the eNB would not already be aware of the different RB's. NSN agrees. The complexity they see is UE complexity, and in the control of the uplink AMBR.
 - Ericsson agrees that it is an SA2 decision. Ericsson proposal is to indicate what the consequences for RAN2 would be.
 - The assumption from Nokia/Ericsson is that if we really need to support an AMBR per PDN, it has to be handled by the UE.
- => Will sent an LS to SA2 indicating that there is considerable UE complexity in supporting multiple AMBR's LS in R2-081990
- R2-081551: RAN level "keep-alive" signalling Qualcomm Europe
- Intention is to introduce something comparable to a periodic cell update (from UMTS).
 - NSN wonders if this is really required. If it is required, it is probably simpler to schedule the UE periodically. Ericsson agrees.
 - NTT DCM thinks there is no need for a keep alive signal: there will be a timer eNB that releases the context after some time.
 - Infineon assumes that a polling solution will anyway be assumed to detect a UE walking out of coverage.
- => Noted; network has already sufficient means to perform a periodic check.
- R2-081601: RLC-PDCP behaviour during Handover LG Electronics Inc.
- Panasonic thinks that in intra-eNB handover the security configuration will change (Cell-Id included). So RLC needs to be reset.
 - LG agrees that this is indeed the current specification behaviour. However still LG thinks this can be improved by having a "ciphering activation time", but now at PDCP level.
 - Ericsson wonders how it would be implemented ? Would it be an indication in RRC ? LG thinks e.g. a 1 bit indicator could be used. Or two bits: 1 for PDCP status reporting and 1 bit for RLC reset.
 - NSN thinks assuming that intra-eNB handovers are a lot simpler than inter-eNB handovers is not valid assumption. So we should correct the RLC.
- => No support for inter-cell handover optimisations, even if intra-eNB.
- Samsung thinks also intra-cell handovers should not be further optimised. TI would also prefer not to have intra-cell handover optimisations.
- => Noted (RLC CR's already available to correct this).
- R2-081635: First quantification of UL control overhead Samsung
- RIM wonders if this is for MIMO or non-MIMO ? Samsung clarifies no MIMO is considered.
 - Samsung clarified that the title should reflect that the contribution is updated with the latest agreements.
- => Noted
- R2-081847: CAC support for VoIP NTT DoCoMo, Inc.
- NSN supports option A limited to RLC UM. Nokia thinks this will almost come for free in current specifications.

- Ericsson thinks that loss rate is only 1 input for the CAC, so this might not really be needed to provided. However if people agree something is needed, Ericsson is happy with both options with a slight preference for option A.
 - Samsung asks how this would be used ? NTT DCM clarified that if a certain number of UE's has a to high loss rate you would take that into account in CAC. Samsung wonders how this is related to the codec rate also adjusting itself on loss detection ?
 - NTT DCM agrees there are multiple ways on how to perform CAC. However they would like to have this as one of the inputs.
 - QC thinks discard in case of VOIP is a consequence of the choice of the scheduler. So the scheduler would know. NTT DCM thinks it will be difficult/impossible for the scheduler to detect this. E.g. at the end of a talk-spurt.
 - Samsung has no strong opinion, but thinks that with option A there is some increase in HFN desynchronisation probability. So we should not later need to introduce a mechanism to prevent HFN desynchronisation.
 - Ericsson does not really understand why the CAC would need to have a very accurate awareness of the UL Packet Loss Rate. E.g. the UL queue size seems also quite usable for this (observing UL BSR's).
 - Orange supports this proposal, with a slight preference for option A.
 - LG wonders what the UE behaviour change is if we go for option A ? NTT DCM indicates we would mandate the UE to allocate an RLC SN to a later discarded packet. LG thinks we already discuss this in last meeting (internal UE behaviour mandating) and the proposal was not accepted. NTT DCM thinks the intention or the Ericsson proposal was slightly different (focused on BSR reporting). LG has big concerns on proposals mandating internal UE behaviour.
- => Noted: can come back if more companies think this accurate awareness is definitely needed.

R2-081906: Radio Link Failure recovery on non prepared eNBNEC

- NSN thinks that the arguments are a bit strange. NSN thinks that in majority the handover is successful. Then if the handover fails, in most cases an RLF cell could be prepared. So this is optimising an error case of an error case. Ericsson agrees with this. In addition this would cause several changes in the RRC spec.
- => Noted

R2-081695: Access Class Barring HUAWEI => Moved to 5.2.2.2.

R2-081662: CS Fallback consideration HUAWEI => Moved to 5.2.1.4

4.6 Broadcast services

4.6.1 MBMS

MBMS is removed from Rel-8. This agenda only deals with the impact of MBMS on Rel-8 specifications, e.g. what is needed in Rel-8 specifications to ensure that Rel-8 UE's will be able to operate in a mixed (MBMS/unicast) system of a later LTE release ? One identified issue concerns the indication of MBSFN frame/subframes for non-MBMS UE's (how to signal this, what is UE behaviour, ... ?).

- R2-081846: Coexistence of non-MBMS UE and MBSFN Alcatel Shanghai Bell, Alcatel-Lucent
- R2-081482: Signaling of the MBSFN subframe allocation parameter Ericsson
- R2-081807: MBSFN Sub-frame Allocation Signalling Motorola
- R2-081626: MBSFN Subframe Allocation ZTE
- R2-081693: MBSFN subframe allocation signaling HUAWEI
- R2-081893: Signalling of MBSFN subframe allocation on mixed carrier Nokia Corporation, Nokia Siemens Networks

Have micro (subframes within frame) and macro (across frames) level ?

For micro level

- *Is the pattern required to be able to match optimal unicast retransmissions ?*
- *1 or 4 frame duration ?*
- *Do we want a relation with paging other than for #0 and #5 ?*

Alternatives:

- *#1-8 consecutive (3 bits)*
- *bitmap (7 or 8 bits for FDD, 5 bits for TDD)*
- *#1-32 with table*

For macro level

- Do we want grouping or distribution ?

- Alternatives:

- 1 frame with periodicity 2^N (e.g. 0 = continuous) (3 bits) [Eric]
- repetition length and repetition period (e.g. 5 + 5 bits or 5 + 8 bits) [ZTE, Mot]
- frames in modification period + offset (e.g. 8 bits) [Huawei]

Other

R2-081519: Discussion on way forward for LTE MBMS LG Electronics Inc.

R2-081651: Avoiding UE camp on Dedicated Carrier cell HUAWEI

R2-081826: Coexistence of unicast reception with future multicast requirements Qualcomm Europe

4.6.2 ETWS support in Rel-8

How to support the Earthquake and Tsunami Warning System functionality in LTE Rel-8 ?

R2-081633: ETWS Air Interface Study NTT DoCoMo, Inc.

R2-081515: ETWS Support in Release 8 LG Electronics Inc.

R2-081487: ETWS support in Rel-8 Ericsson

4.7 Home-(e)NB

4.7.1 Review of SP-080188 (Home-(e)NB requirements)

SA has asked RAN2 to review the agreed CR in SP-080188, and indicate to SA/SA1 whether there are any problems identified with this agreed CR from RAN2 point of view.

R2-081402: SA1 CR SP-080188 on CSG requirements for UTRA/E-UTRA for RAN2 review ETSI MCC CR
=> Noted

R2-081527: HNB/HeNB Requirements Nokia Corporation, Nokia Siemens Networks

- Huawei wonders whether this assumption on “highest priority layer” seems to imply that we can use what is today in 36.304 ? This is indeed the Nokia understanding. Huawei wonders if this are UE specific priorities, how could the network set them correctly around the neighbourhood of the home-cell of the UE ? Nokia assumes it would be always the highest priority. Huawei assumes that there is no need for indicating a highest priority from the macro cell: the UE would now when to look for the home-NB. NSN assumes that still the macro cell should still indicate where the CSG cells are. Huawei agrees, but no priority would need to be signalled (implicitly highest priority when UE knows home-cell is around). Samsung thinks it would be better to not have specific UE behaviour for this case, and thus use the highest priority scheme.
- Nokia thinks that we should also think about the issue whether we can have multiple CSG frequencies, and if so, whether they would have to have different priorities.

UE moving out of CSG cell

- “not meeting the selection requirements” should be updated to “soon as reselection criteria are met”.

Cell reselection performance:

- Tmob wonders what “comparable performance means” ? Indeed a bit unclear.

General

- TIM thinks that in general we should really look at the SA1 requirements and give good feedback. However we should also be willing to consider changing our current solution if requirements demand.

=> Will see an LS on Friday including this proposed text and hopefully also some text added on cell reselection/handover performance based on further LTE inputs. R2-081964. Final version will be approved by email.

R2-081836: Comments on HNB WID RP-080159 Qualcomm Europe => Moved to 6.4.9

4.7.2 Home-eNB handling (LTE-only)

R2-081734: Summary of email discussion on Mobility performance requirements for Home eNB NTT DoCoMo, Inc.
=> Noted

R2-081736: Operators' views on Mobility performance requirements for Home eNB NTT DoCoMo, T-Mobile, Vodafone, Orange, Telefonica

- NSN wonders whether all these requirements are for Rel-8 ? In NTT DCM's understanding, this would be the operators wish.
- TIM supports the document, however have some questions on 2.2.
- LG asks if these requirements also apply to the UMTS home-NB ?

Time criticality of handover

- Huawei wonders whether the UE autonomous search needs to be supported in Rel-8, or whether (if we find a network based solution), this could also be acceptable ? Huawei would not like to rule out a network solution if it would make the UE simpler.
- QC wonders whether outbound mobility is really "normal mobility" ? It is an S1 handover, not an X2 handover. The CSG cell might not be connected to the "local MME" so maybe there is impact on the addressing/cell identity reporting at handover. ASK RAN3 ? Is this not addressed by SON ANR ?

So main requirements: Intra-freq: 1s

Different freq layer: 10-30s

- NSN thinks that cochannel is the most difficult case. So it is a pity that that has the most stringent requirement. Operators assumed that there is no way to avoid such a cell. NTT DCM thinks this could be a coordinated deployment.
- It is assumed that these requirements are not required in combination with SON ANR. But will the macro cell really perform SON ANR for all home-eNB's ?
- QC is assuming that SON ANR is not mandatory for the home-NB to be deployed in the macro network. Huawei thinks that if we could establish these relations by SON ANR, it would make things much simpler. However we could also start to deploy home-eNB's in existing networks.
- Tmob thinks there are many other things to consider: e.g. access control.
- TIM thinks there are two types of solutions: either network supported or non-network supported.
- ZTE wonders whether operators really assume that we will have the same solution for both cases (coverage/non-coverage). This is more a RAN2 issue.

Time criticality of cell reselection

- Motorola assumes the 20-60s a non-testable requirement since you don't know when the UE starts the cell reselection evaluation.
- Intention of the requirement is from entering coverage upto cell reselection

Physical cell identity change of HeNB

- Motorola wonders whether the "mobility shall still be supported" is a requirement for both IDLE and CONNECTED ? NTT DCM confirms for both.
- Scenario considered is e.g. that the UE comes home, turns on his home-eNB and then the home-eNB chooses another L1 id than before. This should not happen when a connection is ongoing.
- RIM asks whether the PCI can change during operation ? NTT DCM assumes this is very infrequent.

Operation frequency change of HeNB

- Chairman asks how strong are these mobility requirements for this and the previous case ? NTT DCM assumes it would be acceptable to check e.g. every 10min.
- => NTT DCM will come with a "performance guidelines" text proposal for 36.300. Will have an email discussion with the intention to agree on a text proposal for the next meeting.

R2-081735: Simple CSG for REL8 Nokia Corporation, Nokia Siemens Networks

- So Nokia proposes a simpler solution with which it should be easier to meet the Rel-8 timeframe, and which has less impact on the macro network layer.
- Ericsson wonders whether this means that if the network provides sufficient DRX, can the network trust that the UE performs the measurement ? Nokia replies that this is in line with the UE autonomous search that we trust the UE to know when to look in all normal CSG situations.
- QC points out that in a VOIP call, with this solution the UE would never find the home cell. Nokia admits that it will be difficult during the VOIP call unless you are lucky that you can read SIB-frame#5. Still Nokia hopes that this is a reasonable limitation for Rel-8.
- Samsung in general likes a simpler approach, but for UE's in short DRX it seems not to work very well.

- TIM thinks that also for Rel-8 it is important to support inbound mobility for VOIP calls. So TIM thinks this solution is to limited. Tmobile thinks it is too early to reduce the requirements to such a level. Vdf thinks that if we do not use the home-NB for coverage, then the solution should be ok. If we do use it as coverage extension, the requirements should be tighter and it should be possible to continue the voice call.
- NSN thinks it is not nice that the UE would ask for measurement gaps. E.g. whenever the UE is in a VOIP call and thinks he is in home-eNB coverage, he starts to ask for measurement gaps which would impact the system scheduling freedom.
- NSN thinks we have CS fallback in Rel-8 for LTE. If we now start to discuss VOIP as the main cause for the home-eNB there seems to be a misalignment in expectations.

R2-081823: Consideration of CSG cell identification in E-UTRAN Qualcomm Europe

Proposal 1:

- Nokia proposes to have a range within the current L1-id-space. QC thinks we could explore the possibility to have additional id's.
- Nokia assumes that re-use of a part of the current L1-is space might be sufficient because the cell coverage is quite limited. QC thinks that anyway, maybe we do not want to re-use for the macro layer.
- Having separate Id's might not help so much for intra-freq if we mandate that the UE always has to camp on the best cell in a frequency. It might help to exclude from cell reporting in an early step.

QC thinks that it would be beneficial in a mixed carrier if home-eNB's have a reserved/special L1-Id space. This would make it easier for UE's in connected mode to exclude these cells from reporting.

- NTT DCM thinks it is more important to first decide who performs the access control for the connected mode case. If it is the macro or home-eNB, the UE can just report the cell.
- NSN thinks we already concluded that the macro-eNB cannot perform access control since there are too many home-eNB's.

R2-081907: Network support to ensure UE autonomous CSG discovery T-Mobile, Huawei

=> Will have email discussion on: What is the basic mechanism for inbound CSG cell reselection/handover. E.g.:

- a) UE requesting measurement gaps
- b) UE using any DRX that is available

=> QC will be leading.

4.8 UE specific RRM information at handover

What UE specific information needs to be exchanged between source and target eNB at handover ?

R2-081521: Last Visited Cell List Definition Vodafone Ltd

R2-081923: UE Specific RRM Container NSN CR 36.331 REL-8

4.9 SON (Self Optimising Networks)

4.9.1 Radio protocol extensions

Radio signalling extensions for SON.

R2-081730: SON Automatic Neighbour Relation Function Nokia Corporation, Nokia Siemens Networks

R2-081552: Further clarification on inter-RAT ANR function Qualcomm Europe

R2-081697: RLF analysis HUAWAI

R2-081895: Solution for interference reduction SON use case Orange

R2-081914: Cell Reselection Parameters Tuning NEC

Not available/Late

R2-081639: ANR based on UE measurement report Samsung

4.9.2 Standardised eNB measurements

Proposals related to further eNB measurements that are essential to standardise.

- R2-081671 SON-Paging load measurement CATT
- R2-081780 Measurements for Self-optimisation of DL Physical Channel Parameters Vodafone Ltd
- R2-081781 Non-GBR QoS indication for Load Balancing SON use case Nortel, Orange

4.10 Inter-RAT mobility UMTS->LTE

This agenda item will be handled in a common UMTS/LTE session. Contributions should only cover Stage-2 aspects: Stage-3 aspects should be discussed under section 6.4.6.

Moved from 4.5 due to general relevance:

- R2-081802: Neighbour List Parameters Motorola
- It was questioned why the frequency specific offset is per group of GERAN freq rather than per frequency. Motorola explained that this is because a layer in GERAN consists of multiple frequencies.
- Proposal 2:
- LG wonders whether we would prevent the transmission of freq-spec-offsets in case of different priorities. At least the UE should not use them in other cases.
 - Motorola clarified that the offsets are only used for the cell reselection evaluation.
- Proposal 3:
- Nokia asks if this also means that in UTRAN they should provide a priority per frequency (in order to avoid ping-pong) ? Motorola agrees with this. Both UTRAN and GERAN should align to this.
 - Panasonic remarks that currently in UTRAN we only have agreed use of priority for inter-RAT mobility. So it is not needed (yet) to provide this in UTRAN. Nokia agrees.
 - Nokia thinks that until priority based cell reselection intra-UMTS is decided, we should also not introduce multiple priorities for UMTS in inter-RAT mobility (again unnecessary ping-pong). Motorola thought this was already the status of 304 for UMTS (there is an FFS in 36.331 only). Nokia confirms that it already assumes a priority per frequency. Nokia thinks that thus to be consistent, we also need priority per frequency in UTRAN.
 - It was clarified that anyway this is only used by Rel-8 UE's.
 - Tmob wonders what the UE would have to do if there are 2 UTRAN frequencies and we would not provide these priorities ? Motorola clarifies that currently the spec says that the "best cell" is selected in this case.
 - Motorola clarified that if you would interwork with a pre-Rel-8 UMTS network, you would probably anyway have to set the same priority for all UMTS carriers.
 - Ericsson is concerned for the impact on UTRAN-only-networks.
- => Proposal 3 is kept open, and hopefully a decision is taken at the next meeting.
- Proposal 4/5:
- Nokia has the same concerns for this proposal. Also proposal 5 is directly related to this.
- => Proposal 4/5 are kept open, and hopefully a decision is taken at the next meeting.
- Proposal 6:
- Samsung asks why this would speed up the cell reselection ? Motorola clarifies without this information, the UE will have to attempt the strongest cell and after having read system information check if the S-criteria are met. So it might take several attempts. We already provide this information in UMTS today. Samsung thinks if the parameter is the same for all frequencies, then there is no reason to check it for any other cell than the best overall cell. Motorola thinks these parameters are often configured differently per carrier.
 - Samsung assumes that anyway before the UE can really camp, he would have to check the value provided in broadcast. Motorola agrees (cell could also be barred).
 - Motorola agrees that there is some benefit and we already included it for GERAN, but Motorola is also fine to remove it for all cases.
 - Nokia thinks proposal 6 is useful to speed up cell reselection. Tmobile also supports this. They do configure different values in different bands/frequencies.
 - Motorola explained that without this information, the UE would go to one frequency and check the best cell. Then it may find that that cell is not suitable and tune to another frequency. So one cell reselection attempt is wasted. This is probably more an issue for GERAN/UTRAN because it takes more time to read BCCH.

- NTT DCM would in general like to reduce the amount of information. However this is only 5 bits, so if it saves some cell reselection scenarios, they are fine with having this.
 - Chairman asks at what point the UE would switch from using the Threshx to Qrxlevmin ? This should probably be captured in 304 (basically when $S < 0$ for the serving cell).
 - Motorola clarifies that the group of frequencies typically corresponds to a band.
- => For the moment we leave it like it is so have it for GERAN and not for UTRAN (GERAN reselection attempts take the longest). Can further discuss if it will be introduced for UTRAN

Proposal 7

- Nokia asks if the eNB could not apply the frequency offsets when he gets the measurements ? Motorola thinks to get the triggering correct, the UE has to apply the offset. In the Motorola proposal, the offset is in the object.

Agreements:

Idle mode reselection:

- 1) Frequency specific offsets are not used for inter-RAT cases
- 2) Frequency specific offsets are possible to provide and shall be used if provided for the LTE inter-frequency case, but only for the case of equal priority frequencies

Connected mode:

- 7) Introduce frequency specific offset per measurement object for UTRA, GERAN, and cdma2000.

R2-081804: Need for Complete Whitelist Motorola

Proposal 2:

- Chairman asks why not the same approach as already used in UMTS was selected (option c) ? Motorola assumes this was not removed on purpose, but more since it was not considered carefully yet.
- NTT DCM wonders if we apply option c, is it the complete frequency or still related to the "cell reselection on same frequency allowed bit". Motorola clarified that in UTRA it is always on the whole frequency in this case.
- Motorola clarified that in the barring case, we have the special bit. For forbidden TA/forbidden PLMN case.

Proposal 3:

- Motorola clarified that the proposal is to add this information on LTE BCCH. So it would mean we indicate the list of UARFCN's and this NCC permitted information.
- Ericsson is fine with the proposal, but thinks the parameter should be optional.
- Vodafone supports this.

Agreements:

- 2) For idle mode reselection to UTRA we will also apply the 300s timer to exclude a frequency for the cases of forbidden TA / forbidden PLMN.
- 3) For idle mode reselection to GERAN the system information may send the IE 'NCC permitted'.
- 5) For connected mode measurements of GERAN, add the IE 'NCC permitted'.

=> Motorola will provide an updated CR proposal in R2-081963 covering the agreements from R2-081802 and R2-081804 (revision of R2-081803)

R2-081963: Reselection and measurement ASN.1

- Samsung wonders if the bandwidth terminology correctly. Naming can be handled by the rapporteur
- => Try Agree by email. Comments up to Tuesday evening, final version Wednesday. If there is contention, we remove it. Final version in R2-082042

Other

R2-081561: Inter-RAT mobility from UMTS to LTE Nokia Corporation, Nokia Siemens Networks

- From all 3GPP RAT's, E-UTRA should be the fastest. So the need for Qrxlevmin is the smallest.
- => So currently no reason to introduce Qrxlevmin for E-UTRAN in UMTS

- Motorola wonders if Qrxlevmin for GERAN should be considered to be added. Nokia agrees. Samsung wonders if no other parameters need to be provided to be able to use Qrxlevmin. Motorola thinks something is needed. But anyway we have the NCL in UMTS. So only the Threshx are the new information. No change needed.
- => Threshx should be in dBm (so updates to 36.304 are needed).
- => Further comments can be given offline.

R2-081564: Equal priority reselection Nokia Corporation, Nokia Siemens Networks

- Tmob thinks the same behaviour can be achieved when we would set the serving RAT to the highest priority. This should work even in case of 3 RAT's, if they each set themselves to the highest priority ?
 - NSN thinks that even though it might be possible with different configurations, still it would be good to align to GERAN.
 - Ericsson sees some benefits because of reduced error cases.
 - Tmob does not like the proposal because in case of short coverage dips, they don't want the UE to move to another priority RAT. Nokia thinks Treselection should be used in both cases.
 - Tmob thinks the question is whether we give the burden to the UE or eNB. Nokia sees no big impact to UE implementations, since the UE behaviour is anyway the same as lower priority layers.
 - In case 3 RAT's are of the same priority and the serving RAT is going bad, how would you select between which of the other 2 RAT's to choose ? Nokia thinks this can be left to UE implementation.
- => Offline discussions and come back on Friday
- Return on Friday: different opinions exist. Since next GERAN meeting is after our next meeting, issue can be revisited at next meeting. Offline discussion can continue.

R2-081900: Release 8 mandatory features NEC

=> Updated in R2-081961

R2-081961: Release 8 mandatory features NEC a.o.

- Ericsson agrees that it is a sensible approach to consider each feature individually. Ericsson thinks that the 3 features identified here are either linked to optional DL features and therefore it seems sensible to make these features optional (as long as these DL features are not made mandatory).
 - However Ericsson thinks an alternative would be possible for a terminal to be UMTS Rel-7, and not indicate any UMTS capability in LTE (just a "thought). So we need to think a bit more on how the interworking would look.
 - Ericsson is also not sure we would freeze the ASN.1 of UMTS and LTE at the same time for Rel-8.
 - Nokia wonders whether this is really a RAN2 issue, or a RAN issue. Indeed for UMTS Rel-7, it was RAN that finally decided. So probably we would do the same this time: WG's list technical dependencies, and RAN decides on the M/O of features.
- => Noted

5 UTRA/UTRAN Long Term Evolution Stage 3

5.1 User plane

This agenda item was treated in a parallel ad hoc on Wednesday and Thursday (see Annex F) and minutes were taken in a separate report in RP-082026 which was agreed on Friday (see agenda item 7.2).

5.2 Control plane

This agenda item was treated in a parallel ad hoc on Tuesday, Wednesday and Thursday (see Annex G) and minutes were taken in a separate report in RP-082008 which was agreed on Friday (see agenda item 7.1).

6 UTRA/UTRAN

UTRA/UTRAN aspects were treated in a separate ad hoc on Monday, Tuesday and Wednesday.

6.0 Open issues from last meeting

R2-080670 LS on 1.28 Mcps TDD HS-DSCH physical layer categories and related transport block sizes for 64-QAM modulation, RAN1 (R1-080619; to: RAN2; cc: -; contact: ZTE), REL-8 RANimp-64Qam1.28TDD
- Reply LS in next meeting when the CRs are ready (see 6.4.10).

- CB next meeting

[R2-080671](#) Reply LS on CS Voice over HSPA, SA4 (S4-080126; to: RAN2; cc: -; contact: Nokia), REL-8 RInImp8-CsHspa

- See R2-081839. Draft reply in R2-081952, final reply LS in R2-081970.

6.1 Incoming LSs on UTRA (all releases)

[R2-081408](#) Reply LS to RP-071046 on Tests on receiving System Info 5bis (RP-080230; to: GSMA DG; cc: RAN2; contact: Ericsson) RAN
no RAN2 action requested, R99, UMTS bands, testing presented by Sven Ekemark (Ericsson)

- Noted, no LS answer

[R2-081436](#) Reply LS to R5-080525 on HSPA RB and SRB configurations in 34.108 (R1-081144; to: RAN5; cc: RAN2; contact: Ericsson) RAN1
no RAN2 action requested, REL-7, 64QAM DL, MIMO and Improved L2 for higher data rates presented by Martin van der Zee (Ericsson)

- Noted, no LS answer

[R2-081437](#) Reply LS to R5-080526 on new MCCH radio bearer configuration in 34.108 (R1-081145; to: RAN5; cc: RAN2; contact: Ericsson) RAN1
no RAN2 action requested, REL-7, MBMS-RAN presented by Martin van der Zee (Ericsson)

- Noted, no LS answer

[R2-081438](#) LS on status of study item "HS-PDSCH serving cell change enhancements" (R1-081149; to: RAN, RAN2; cc: -; contact: Qualcomm) RAN1
RAN2 action requested, REL-8, HS-PDSCH serving cell change enhancements presented by Etienne Chaponniere (Qualcomm)

- Noted, no LS answer

[R2-081439](#) LS on Synchronised E-DCH specification impacts (R1-081150; to: RAN2, RAN3, RAN4 ; cc: -; contact: NSN) RAN1
RAN2 action requested, REL-8, RANFS-UplinkSync presented by Markus Wimmer (NSN)

- There is no WI created by RAN so in principle no work is required
- Noted, no LS answer

R2-081440 LS on "Changes to the format of TMGI" ([R2-080434](#); to: RAN2, CT4; cc: SA2; contact: Huawei) RAN3
RAN2 action requested, REL-6, TEI6 presented by Sherry Zheng (Huawei)

- Ericsson comments that for the question on whether the PLMN Id is always necessary is captured in the extract of 25.304. Thus the PLMN Id should be always present.
- It is agreed that this reply should be sent to RAN3, i.e. the PLMN Id is always used in order to calculate the MICH occasion.
- Reply in [R2-081933](#) by Huawei (see section 6.5: final LS answer in R2-081971).

R2-081998 Reply LS to R2-081974 on HS-DPCCH usage with Enhanced Uplink in Cell_FACH (R3-080963; to: RAN2; cc: RAN1; contact: NSN) RAN3

- Not treated as LS arrived after session was closed. Therefore to be resubmitted to RAN2 #62.

6.2 Release 6 corrections (and corrections to earlier releases)

(WI codes: MBMS-RAN; EDCH, etc.)

REL-4, TEI4:

[R2-081495](#) Clarification on MAX_CID Ericsson CR 25.331 REL-4TEI4

[R2-081496](#) Clarification on MAX_CID Ericsson CR 25.331 REL-5TEI4

- This was already corrected from Rel-6 on, so there is no need for a Rel-6/7/8 CR
- The CRs (REL-4, REL-5) are technically endorsed.

REL-6, MBMS-RAN:

[R2-081497](#) Interpretation of the 'Neighbouring cell identity' in MBMS NEIGHBOURING CELL PTM RB INFO Ericsson CR 25.331 REL-6, MBMS-RAN

- The CRs (REL-6 + cat.A REL-7/8) are technically endorsed
- Note: [R2-081497](#) and Rel-7/8 shadows are allocated CR numbers 3127, 3128 and 3129 these numbers had been assigned in RAN2#59bis for these CRs but have never been used. (Doesn't matter. CRs will get new CR numbers.)

[R2-081498](#) Clarification on MBMS dispersion Ericsson CR 25.331 REL-6, MBMS-RAN

- The CRs (REL-6 + cat.A REL-7/8) are technically endorsed

REL-6, TEI6:

[R2-081566](#) Correction to HCS LG Electronics Inc. CR 25.304 REL-6, TEI6

- Nokia wonders whether this problem has really been found or whether this is a theoretical problem.
- LGE confirms that this is a real problem that has been found in the network.
- Ericsson does not see a problem, and understand that the understanding A is the correct understanding.
- LGE confirms that understanding A is a correct interpretation, but believes that this is not the best behaviour since it may lead to the fact that the UE can not find any suitable cell.
- Nokia believes that there is probably a problem with the operator setting, and that rather the setting should be corrected, since the setting is a rather strange setting. Nokia considers that the H criteria should be always higher than the S criteria.
- The CRs (REL-6 + cat.A REL-7/8) are rejected.

[R2-081665](#) Correction to the calculation of DPCH frame offset for F-DPCH on timing re-initialised hard handover NTT DoCoMo CR 25.331 REL-6, TEI6

- Nokia asks whether there should be a different impact analysis. Nokia wonders whether the IOT flag should be used for this correction.
- Ad-hoc chair wonders whether the IOT flag should be set to true only if the CR is included.
- NTT DCM considers that the flag should only be set to true if the CR is implemented and agrees that strictly speaking this is a non-backwards compatible change, but it is in fact an error in the specifications.
- Nokia considers that this is a non-backwards compatible change and thus the flag has to be used in order to make it work.

- Qualcomm considers that this is the intended behaviour.
- Ad-hoc chair clarifies that implementing the CR straight away does not really bring a problem to the UE.
- ALU wonders whether we can be sure that there will be no UEs launched that will indicate that the IOT is done.
- Nokia believes that this should be able that this can be done in Rel-6. Nokia currently does not set the flag to true, so the flag can be used to indicate that the CR is implemented from their perspective.
- Qualcomm would like to check further.
- Nokia considers that the final decision will only be in RAN plenary anyway so a first idea would be welcome.

- The CR is technically endorsed. Some more analysis on the impact and the relation to the IOT flag should be provided.
- REL-6 and cat.A REL-7/8 CRs will be provided for RAN2 #62.
Note: The WI code should not be TEI6 but RANimp-RABSE-CodeOptFDD.

6.3 Release 7 corrections

6.3.1 Enhanced CELL_FACH state in FDD

(RAN2 WI, RANimp-EnhState, May 07, closed)

[R2-081645](#) Correction on the attribute of Treset in system information HUAWEI CR 25.331 REL-7

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081646](#) Editorial correction to reconfigure MAC-ehs reordering queue HUAWEI CR 25.331 REL-7

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081648](#) RLC TM mode allowed when BCCH mapping on HS-DSCH HUAWEI CR 25.308 REL-7

- The title should be "RLC UM mode is allowed when BCCH mapping on HS-DSCH"
- Nokia comments that the coversheet should be RLC TM. The wording should be improved.
- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

6.3.2 Improved L2 support for high data rates

(RAN2 WI, RANimp-L2dataRates, May 07, closed)

[R2-081544](#) Discussion on MAC-d flow definition for MAC-ehs Alcatel-Lucent Disc

- NEC would like to cosign these documents.
- Qualcomm wonders why we need this kind of changes on the MAC-d flow in Uu specs, since there is no need for this type of concept.
- ALU considers that there is a need to introduce and define how the MAC-d flow is defined in order to clarify that there should be a change to clarify that what comes out of MAC-d is not a MAC-d flow for MAC-ehs, but multiplexing can be allowed.
- No company has concerns in multiplexing different MAC-ehs each logical channels on the lub interface.
- Paul wonders whether there is really something that we need to change.
- Samsung considers that there is no difference compared to Rel-6.
- Tdoc is noted.

[R2-081545](#) Change of MAC-d flow definition for MAC-ehs Alcatel-Lucent CR 25.321 REL-7

- Ericsson considers that the CR is clarifying things and support this approach.
- Updated in R2-081937

[R2-081546](#) Change of MAC-d flow definition for MAC-ehs Alcatel-Lucent CR 25.321 REL-8

- Updated in 1938

[R2-081937](#) Change of MAC-d flow definition for MAC-ehs Alcatel-Lucent CR 25.321 REL-7

[R2-081938](#) Change of MAC-d flow definition for MAC-ehs Alcatel-Lucent CR 25.321 REL-8

- The CRs [R2-081937](#) (REL-7) and [R2-081938](#) (REL-8) are technically endorsed.

[R2-081547](#) Change of MAC-d flow definition for MAC-ehs Alcatel-Lucent CR 25.308 REL-7

- ALU proposes that in Figure 6.1.2-3 there should be no MAC-d flows shown similar to 4.2.3.5.
- Updated in R2-081935
- [R2-081548](#) Change of MAC-d flow definition for MAC-ehs Alcatel-Lucent CR 25.308 REL-8
- It is agreed that the Figure 6.1.2-3 should be updated as above.
- Updated in R2-081936
- [R2-081935](#) Change of MAC-d flow definition for MAC-ehs Alcatel-Lucent CR 25.308 REL-7
- [R2-081936](#) Change of MAC-d flow definition for MAC-ehs Alcatel-Lucent CR 25.308 REL-8

- The CRs [R2-081935](#) (REL-7) and [R2-081936](#) (REL-8) are technically endorsed.
- Broadcomm comments that the UE box should be unticked.
- ALU considers that since the UE description is impacted it should stay ticked.

- [R2-081967](#) Re-establishment condition for RLC reconfiguration to fixed from flexible PDU size Ericsson CR 25.331 Rel-7

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

6.3.3 CPC

(RAN1 WI, RANimp-CPC, March 07, closed)

No input documents.

6.3.4 MIMO

(RAN1/2/3/4 WI, MIMO, March 07, closed)

No input documents.

6.3.5 16 QAM UL

(RAN1 FDD WI, RANimp-16QamUplink, May 07, closed)

No input documents.

6.3.6 64 QAM DL

(RAN1 FDD WI, RANimp-64QamDownlink, May 07, closed)

No input documents.

6.3.7 MBMS Physical layer Enhancements

(3 RAN1 WIs, MBMSE-RANPhysFDD, MBMSE-RANPhysTDD, MBMSE-RANPhysLCRTDD, May 07, closed)

No input documents.

6.3.8 GNSS in UTRAN

(RAN2 WI, LCS3-GNSS-UTRAN, May 07, closed)

No input documents.

6.3.9 1.28 Mcps TDD Enhanced Uplink

(RAN1/2/3/4 WI, LCRTDD-EDCH, March 07, closed)

*[R2-081701](#) Extended power control gap for E-PUCH in LCR TDD TD Tech Ltd. CR 25.331 REL-7

Revised in R2-081949.

[R2-081949](#) Extended power control gap for E-PUCH in LCR TDD CATT, TD Tech, ZTE, RITT, Spreadtrum Communications CR 25.331 REL-7

- The name should be v790 instead of v7xy.
 - Ericsson comments that the "pebase-PowerControlGap" should be included in the import list.
- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081702](#) Release 7 clarification of HARQ power offset selection during multiplexing of multiple MAC-d flows TD Tech Ltd. CR 25.321 REL-7

Revised in R2-081950.

[R2-081703](#) Release 8 clarification of HARQ power offset selection during multiplexing of multiple MAC-d flows TD Tech Ltd. CR 25.321 REL-8

Revised in R2-081951.

[R2-081950](#) Release 7 clarification of HARQ power offset selection during multiplexing of multiple MAC-d flows CATT, TD Tech, ZTE, RITT, Spreadtrum Communications CR 25.321 REL-7

[R2-081951](#) Release 8 clarification of HARQ power offset selection during multiplexing of multiple MAC-d flows CATT, TD Tech, ZTE, RITT, Spreadtrum Communications CR 25.321 REL-8

- The CR number is incorrect
 - Nokia wonders whether the term "traffic type" should be better changed
 - TD Tech propose to state "transmission mode"
 - Ericsson propose to state "mapped to the same type of resource (scheduled resource / non-scheduled resource)"
 - Ericsson asks whether the related RAN1 spec is changed as well.
- The CRs [R2-081950](#) (REL-7) and [R2-081951](#) (REL-8) are technically endorsed.

[R2-081738](#) Correction on the Mapping of TRRI field and MSB/LSB for 1.28 Mcps TDD EUL CATT CR 25.321 REL-7

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081741](#) Clarification of method in determine state of a E-TFC for TDD CATT CR 25.321 REL-7
Revised in R2-081939.

[R2-081939](#) Clarification of method in determine state of a E-TFC for TDD CATT, TD Tech, ZTE, RITT, Spreadtrum Communications CR 25.321 REL-7

- Nokia comments that there should not be any "shall" in the informative annex.
 - Ericsson comments that "the available power" should be "the maximum available power"
- With the above comments the CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081745](#) Modification of TBS tables and E-TFC selection for LCR TDD CATT CR 25.319 REL-7

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081746](#) Modification of TBS tables and E-TFC selection for LCR TDD CATT CR 25.321 REL-7
Revised in R2-081940.

[R2-081940](#) Modification of TBS tables and E-TFC selection for LCR TDD CATT, TD Tech, ZTE, RITT, Spreadtrum Communications CR 25.321 REL-7

- Nokia wonders whether this change is backwards compatible
 - CATT has confirmed with other LCT companies that this backwards non-compatible change is ok with them
- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081747](#) Clarification of the definition of PRRI for TDD CATT CR 25.319 REL-7

[R2-081748](#) Clarification of the definition of PRRI for TDD CATT CR 25.321 REL-7

[R2-081749](#) Clarification of the definition of PRRI for TDD CATT CR 25.331 REL-7

The contents of these CRs has been merged in the CRs from [R2-081945](#)- [R2-081947](#)

[R2-081750](#) Completion of the mechanism for Scheduling Information transmission on MAC-e PDU alone for 1.28 Mcps TDD in EUL CATT CR 25.319 REL-7

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081751](#) Completion of the mechanism for Scheduling Information transmission on MAC-e PDU alone for 1.28 Mcps TDD in EUL CATT CR 25.321 REL-7

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081752](#) Completion of the mechanism for Scheduling Information transmission on MAC-e PDU alone for 1.28 Mcps TDD in EUL CATT CR 25.331 REL-7

Revised in R2-081941.

[R2-081941](#) Completion of the mechanism for Scheduling Information transmission on MAC-e PDU alone for 1.28 Mcps TDD in EUL CATT, TD Tech, ZTE, RITT, Spreadtrum Communications CR 25.331 REL-7

- Non-backward ASN.1 correction is needed to ensure SI retransmission mechanism. This only impact LCR TDD, not affect FDD and HCR TDD.
- The two new IEs should be MP
- Ericsson wonder whether it would have been possible to do this using non-critical extensions
- CATT thinks that there is no real use of using the non-critical extensions, since without the IEs it does not work.

- It is agreed that the new IEs shall be mandatory. The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081753](#) Triggers, transmission and reliability of Scheduling Information for LCR TDD CATT CR 25.319 REL-7

Revised in R2-081942.

[R2-081942](#) Triggers, transmission and reliability of Scheduling Information for LCR TDD CATT, TD Tech, ZTE, RITT, Spreadtrum Communications CR 25.319 REL-7

- "In the case where the UE has no Grant and it has data to send, or an E-DCH serving cell change occurs with the TEBS larger than zero, or higher priority data arrives:" should be updated such that the "no Grant" applies to all three conditions.
- The order of the conditions should be clarified and updated.

- The CRs (REL-7 & cat.A REL-8) are technically endorsed including the above updates.

[R2-081754](#) Triggers, transmission and reliability of Scheduling Information for LCR TDD CATT CR 25.321 REL-7

Revised in R2-081943.

[R2-081943](#) Triggers, transmission and reliability of Scheduling Information for LCR TDD CATT, TD Tech, ZTE, RITT, Spreadtrum Communications CR 25.321 REL-7

- Ericsson wonders whether the "Grant Request" is also applicable if the UE has no grant and needs a new grant
- The need for the first paragraph should be discussed offline.
- Nokia comments that the Note does not seem to be only an explanation but contains a requirement. Use "shall" instead of "will"

- The CRs (REL-7 & cat.A REL-8) are technically endorsed including the solution of the above issue.

[R2-081755](#) Counter and timers for Scheduling Information Reporting of LCR TDD CATT CR 25.331 REL-7

Revised in R2-081944.

[R2-081944](#) Counter and timers for Scheduling Information Reporting of LCR TDD CATT, TD Tech, ZTE, RITT, Spreadtrum Communications CR 25.331 REL-7

- Non-backward ASN.1 corrections are needed to make the LCR TDD E-DCH mechanism work well.
- The style of the bullets should be corrected.

- The CRs (REL-7 & cat.A REL-8) are technically endorsed including the changes in the bullet style.

[R2-081910](#) Clarification of the definition of PRRI for TDD CATT, IPWireless CR 25.319 REL-7
Revised in R2-081945.

[R2-081945](#) Clarification of the definition of PRRI for TDD CATT, TDTech, ZTE, RITT, Spreadtrum Communications, IPWireless, Nextwave CR 25.319 REL-7

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081911](#) Clarification of the definition of PRRI for TDD CATT, IPWireless CR 25.321 REL-7
Revised in R2-081946.

[R2-081946](#) Clarification of the definition of PRRI for TDD CATT, TDTech, ZTE, RITT, Spreadtrum Communications, IPWireless, Nextwave CR 25.321 REL-7

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081912](#) Clarification of the definition of PRRI for TDD CATT, IPWireless CR 25.331 REL-7
Revised in R2-081947.

[R2-081947](#) Clarification of the definition of PRRI for TDD CATT, TDTech, ZTE, RITT, Spreadtrum Communications, IPWireless, Nextwave CR 25.331 REL-7

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

*[R2-081922](#) Correction and Clarification of E-RUCCH Info for LCR TDD CATT, TD-TECH CR 25.331
REL-7

Revised in R2-081948.

[R2-081948](#) Correction and Clarification of E-RUCCH Info for LCR TDD CATT, TDTech, ZTE, RITT, Spreadtrum Communications CR 25.331 REL-7

- This CR does a non-backwards compatible change on ASN.1
- The coversheet should reflect that this is a non-backwards compatible change.
- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

6.3.10 7.68 Mcps TDD

(RAN1/2/3/4 WI, VHCR TDD, March 06, closed)

No input documents.

6.3.11 3.84/7.68 Mcps TDD Enhanced Uplink

(3.84Mcps: RAN1/2/3/4 WI, EDCH TDD, Sep. 06, closed;

7.68Mcps: RAN1 WI, RANimp-VHCR TDD-EDCH, Dec 2006, closed)

No input documents.

6.3.12 TEI7

[R2-081499](#) Minor ASN.1 corrections due errors detected during v780 implementation Ericsson CR 25.331 REL-7

- ALU wonders whether there is any functional impact, so we could de-check both UE and RAN boxes.
- Ericsson agrees, but it seems difficult to have a CR without any impact

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081611](#) problem and solution concerning the network option to extend the SRNC identity over 12 bits
ZTE CR REL-7

- Withdrawn (not available)

[R2-081612](#) Adding 16bitmode" indicator for RNC identity" ZTE CR 25.331 REL-7

- Withdrawn (not available)

[R2-081647](#) Editorial correction to variable description of CELL_INFO_LIST HUAWEI CR 25.331 REL-7

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081714](#) Correction on UM model depiction Samsung CR 25.322 REL-7

- The Figure 4.3a will be changed to change the color of the text.

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

[R2-081717](#) Clarification on DAR Operation Samsung CR 25.322 REL-7

- Qualcomm wonders whether this should be corrected in Rel-6 as well.
- Samsung would be happy to have this CR in Rel-6 already.
- Qualcomm wonders on the impact if a UE does not implement this.
- For the first change there might be an impact, for the second change this is rather a clarification.
- Nokia thinks that there should be a mode detailed impact analysis.
- Samsung thinks that the impact relates to the MBMS service. So if there is no re-establishment there would be some blocks missed.
- WI code should be MBMS.
- Interdigital wonders whether it is possible that a PDU is stored if SN is not larger than VR(UDR).
- CB to check whether this can already be done in Rel-6.

- The CRs (REL-7 & cat.A REL-8) are technically endorsed

[R2-081818](#) Handling of TRANSPORT FORMAT COMBINATION CONTROL Qualcomm Europe CR 25.331 REL-7

[R2-081819](#) Handling of TRANSPORT FORMAT COMBINATION CONTROL Qualcomm Europe CR 25.331 REL-8

- Nokia considers that there is a problem for legacy UEs, and that pre Rel-7 UEs will have an undefined behaviour.
- Nokia considers that there is a problem on the first bullet 3 that does not mention for the issue when the Duration has not elapsed, but the activation time has elapsed.

- The CRs (REL-7 & cat.A REL-8) are technically endorsed with the correction on the case when the "Duration" has not elapsed to be clarified that the activation time has passed.

[R2-081830](#) Removal of UTRAN behaviour LG Electronics Inc. CR 25.322 REL-7

- Ericsson agrees to this way forward.
- Qualcomm wonders what happens if we agree on a POLL_SUFI for Rel-8. In this case this could be merged.
- ALU does not understand why we should move this into a note, since this behaviour is not wrong.
- Ericsson considers that there is no need for a normative requirement in 11.3.2.
- ALU agrees to keep the changes in 11.3.2

- The CRs (REL-7 & cat.A REL-8) are technically endorsed.

6.4 Release 8

6.4.1 Improved L2 for uplink

(RAN2 WI, RANimp-UplinkL2dataRates, 95%, June 08)

Coding of Min/Max RLC PDU size

- [R2-081505](#) Configurable values for the minimum and maximum RLC PDU size Ericsson Disc
- Qualcomm wonders whether there is a different MAX/MIN RLC PDU size per transport channel or per logical channel
 - Ericsson considers per logical channel.
 - Qualcomm wonders what would be the benefit for having it per logical channel.
 - Ericsson would like to keep the flexibility to have a different setting.
 - Ericsson agrees that there may not be a huge interest to have a per logical channel setting, but e.g. for cases like VoIP it could make sense.
 - Nokia agrees to this proposal.

- [R2-081506](#) Configurable values for the minimum and maximum RLC PDU size Ericsson CR 25.331
- The CR (REL-8) is technically endorsed.

Radio awareness criteria

- [R2-081524](#) RLC PDU size selection for Enhanced L2 UL Nokia Corporation, Nokia Siemens Networks, Ericsson Disc
- Qualcomm wonders why Nokia assumes that one TTI delay only allows to prepare one PDU size in advance.
 - ALU wonders whether the intention is to base the decision on the size only on the selected E-TFC or on the grant.
 - Nokia considers that it is only possible to base it on the E-TFC selection
 - AdHoc chair asks whether only the creation of the MAC-PDU is delayed or the complete E-TFC selection that is based on the grants from previously.
 - Ericsson considers that it is a valid point that if the E-TFC selection in a previous selection was limited due to limited data it would not be wise to limit the size of the MAC-PDU.
 - Ericsson clarifies that there could be an incentive to create more PDUs in advance in order to be ready have something to sent in case that the grant advances.
 - AdHoc wonders whether we will always have segmentation in the case of constant grant when some segments remain.
 - Ericsson thinks that this is a consequence of this proposal, and depends on the history of the E-TFC selection.

- [R2-081525](#) RLC PDU size adaptation Ericsson, Nokia Corporation, Nokia Siemens Networks CR 25.322
- InterDigital states that the specification suggests that current TTI is the TTI when the MAC-PDU is transmitted.
 - Nokias intention is to allow the fully radio aware scheme.

- [R2-081712](#) RLC PDU Size Adaptation SamsungDisc
- Qualcomm wonders about the error case whether the dropped packets would be retransmitted.
 - Samsung considers that there would be some kind of local Nack, or we could just rely on RLC retransmissions.

- [R2-081832](#) Specifying RLC PDU size selection for uplink improved L2 InterDigital Disc
- Noted

- [R2-081876](#) RLC PDU size selection for Improved L2 Qualcomm Europe Disc
- It is agreed to specify a scheme where the RLC-PDUs are created based on current or previous E-TFC selection.
 - ALU considers that we should try to match the grant, and not on the E-TFC selection.
 - Ericsson considers that it would be a good idea as well to base the selection on the grant, and not the selected E-TFCI
 - Nokia considers that there should be no difference since this would imply that there would be a difference compared to the UE categories. Nokia does not see why we need this kind of differentiation since it would imply a different UE implementation.