3GPP TSG-RAN WG2 Meeting #109bis-e R2-200xyzw

**Electronic, 20 April – 30 April 2020**

Source: RAN2 Chairman (Mediatek)

Title: Chairman notes

# Main session email list

This sub-clause lists the email discussions of the main session, Email discussions xyz range: [000]-[099]. Main Session Comprises normally Agenda Items: 1, 2, 3, 5 NR R15 except positioning, 6.0 R16 Organizational, 6.1 IAB, 6.7 IIOT, 6.10 DCCA, 6.19 Other, 6.20 TEI16 except positioning, 6.21 On-demand SI in Conn, 6.22 URLLC, 8 Session Reports, meeting conclusion.

NOTE that for email discussions that treat several documents where each document Author is listed as email discussion rapporteur, a) each author is responsible to promote and argue for his document in the email discussion, b) the first company in the list sends off the first kick-off email.

* [NR Rel-16] 38331 ASN1 \* (Ericsson)

Scope: ASN.1 review email discussions for management of RIL issues and the ASN.1 review file span multiple meetings.

See also ftp.3gpp.org/Email\_Discussions/RAN2/[Misc]/ASN1 review/Rel-16 2020-06\* (where \* may be e.g. Phase1).

Deadlines planning and detailed instructions: Communicated in the email discussion.

* [LTE Rel-16] 36331 ASN1 \* (Samsung) (This discussion doesn’t belong to the main session but can be seen here only for completeness)

Scope: ASN.1 review email discussions for management of RIL issues and the ASN.1 review file span multiple meetings.

See also ftp.3gpp.org/Email\_Discussions/RAN2/[Misc]/ASN1 review/Rel-16 2020-06\* (where \* may be e.g. Phase1).

Deadlines planning and detailed instructions: Communicated in the email discussion

* [AT109bis-e][000] RAN2 109bis-e Organizational Main (Chairman)

Scope: Meeting: Opening and Closing of the meeting. AI 1, 2, 3. General things that do not fit elsewhere. Johan’s session topics: Comments to session notes. Management of email discussions for main session. Coordination issues.

Deadline for comments, for items pre-allocated to be treated by this email discussion: **April 23 0700 UTC**

For other items (ad-hoc) that requires attention, it is assumed that companies will reply asap during office hours, Decisions can be declared at any time respecting the 24h grace time.

* [AT109bis-e][001][NR15] PDCP version change (Ericsson)

Part 1: first rounds of comments, suggest decisions based on initial comments, identify whether there is need for on-line treatment. Deadline: April 23, 0700 UTC

Part 2: if agreeable, expected continuation to agree CRs.

* [AT109bis-e][002][NR15] 37340 corrections (Huawei)

Scope: Treat R2-2003539, R2-2003540, R2-2003689

Part 1: Decision whether to make corrections or not, identify agreeable corrections. Deadline: April 23, 0700 UTC.

Part 2: if agreeable, expected continuation to agree CRs.

* [AT109bis-e][003][NR15] MAC Maintenance (Samsung)

Scope: Treat all tdocs for AI 5.3.1

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][004][NR15] RLC and PDCP Maintenance (Qualcomm)

Scope: Treat all tdocs for AI 5.3.2 and 5.3.3

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs

* [AT109bis-e][005][NR15] L1 Configuration (Huawei, ZTE)

Scope: Treat R2-2002551, R2-2003537, R2-2003538, R2-2002697, R2-2002698

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][006][NR15] L2 Configuration (Samsung, ZTE)

Scope: Treat R2-2002917, R2-2002948, R2-2002949, R2-2002886

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][007][NR15] Security (Qualcomm, Nokia, Huawei)

Scope: Treat R2-2003334, R2-2003335, R2-2003336, R2-2003337, R2-2002985, R2-2002986, R2-2003697, R2-2003698.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][008][NR15] Conn Control Miscellaneous I (Nokia, Ericsson, CATT, Huawei)

Scope: Treat R2-2002681, R2-2002682, R2-2002683, R2-2003071, R2-2003386, R2-2003196, R2-2003197, R2-2002787, R2-2003480, R2-2003483,

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][009][NR15] Conn Control Miscellaneous II (Huawei, Google, China Unicom)

Scope: Treat R2-2003690, R2-2003691, R2-2003692, R2-2003693, R2-2003694, R2-2003695, R2-2003670, R2-2003671, R2-2003778,

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][009][NR15] Conn Control Miscellaneous II (Huawei, Google, China Unicom)

Scope: Treat R2-2003690, R2-2003691, R2-2003692, R2-2003693, R2-2003694, R2-2003695, R2-2003670, R2-2003671, R2-2003778,

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][010][NR15] Measurements (Huawei, Nokia)

Scope: Treat all docs under AI 5.4.1.2

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC (chair comment: expect R2-2002692 and 2693 to be easy agreements as we already have agreed them).

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][011][NR15] System Information & Other (Huawei, Ericsson, Apple)

Scope: Treat all docs under AI 5.4.1.3 and AI 5.4.1.5

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][012][NR15] Inter Node Coord (Ericsson, Google)

Scope: Treat all docs under AI 5.4.1.4

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][013][NR15] UE Cap Codebook parameters (Nokia, Huawei)

Scope: Treat R2-2002552, R2-2002990, R2-2003456, R2-2003816, R2-2003817, R2-2003457, R2-2003458

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs

* [AT109bis-e][014][NR15] UE Cap Miscellaneous I (Qualcomm, ZTE, Mediatek, Huawei)

Scope: Treat R2-2002571, R2-2002572, R2-2002696, R2-2002578, R2-2002679, R2-2002724, R2-2003463, R2-2003464

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][015][NR15] UE Cap Miscellaneous II (Qualcomm, ZTE, Mediatek, Huawei)

Scope: Treat R2-2003306, R2-2003307, R2-2003280, R2-2003281, R2-2003459, R2-2003460, R2-2003461, R2-2003462

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][016][NR15] UE Cap Miscellaneous III (Oppo, ZTE, Nokia, Huawei)

Scope: Treat R2-2002694, R2-2002695, R2-2002637, R2-2002636, R2-2002989, R2-2002678, R2-2003541, R2-2003542

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][017][NR15] Cell Barred (Huawei)

Scope: Treat R2-2003339, R2-2003773

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][018][IAB] Stage-2 (Qualcomm, Huawei)

Scope: Treat Stage-2: Issues, corrections and CRs (add CRs to x.300 if needed).

Specifically: R2-2003014, R2-2002728, R2-2003178

Part 1: Treat meeting input and comments.

Deadline: April 24 0700 UTC

Part 2: Update of CRs, e.g. to include agreements this meeting

* [AT109bis-e][019][IAB] BAP (Huawei)

Scope: Treat BAP issues corrections and CR.

Part 1: R2-2003011 (and other non-controversial corrections if any), R2-2003561 P1 and P2

Part 2: Potential additions after on-line session, or other forgotten things (TBD)

Deadline: April 23 0700 UTC

Part 3: Update of CR, e.g. to include all agreements this meeting

* [AT109bis-e][020][IAB] User Plane (Samsung)

Scope: Treat UP issues corrections and CR.

Part 1: R2-2002691 (and other non-controversial corrections if any)

Part 2: Potential additions after on-line session (TBD)

Deadline first round: April 23 0700 UTC

Part 3: Update of CR

* [AT109bis-e][021][IAB] RRC (Ericsson)

Scope: Treat RRC issues corrections and CRs (except UE cap, which is treated separately)

Part 1: Non-Controversial parts of R2-2003297 (easy agreements), R2-2003298, R2-2003299 (and other non-controversial corrections if any), first round of discussion on R2-2003020

Part 2: Potential additions after on-line session (TBD)

Deadline first round: April 23 0700 UTC

Part 3: Update of CRs

* [AT109bis-e][022][IAB] RLF Handling (Qualcomm)

Scope: Treat RLF handling to close open issues and make correction if applicable, R2-2003813, and R2-2003726

Expected outcome: Decisions taken in this email discussion shall be taken into account in the other email discussions on CRs: RRC, possibly BAP, Possibly Idle Mode TS.

Deadline: April 24 0700 UTC

* [AT109bis-e][023][IAB] IP address allocation (Samsung)

Scope: Treat IP address allocation to close open issues and make correction if applicable, R2-2002522, R2-2002523 and R2-2002672

Expected outcome: Decisions taken in this email discussion shall be taken into account in the other email discussions on CRs: RRC.

Deadline: April 24 0700 UTC

* [AT109bis-e][024][IAB] 38304 36304 (Huawei)

Scope: Treat 36304 38304: Issues, corrections and CRs

Specifically: R2-2003012, R2-2003013, R2-2003179, R2-2003346

Part 1: Treat meeting input and comments. If more time is needed, e.g. for R2-2003346, gather initial comments and suggest way forward for decisions next meeting.

Deadline: April 24 0700 UTC

Part 2: Update of CRs, e.g. to include agreements this meeting

* [AT109bis-e][025][IIOT] Accurate Reference Timing (Vivo)

Status: Not yet Started, will be started after on-line session April 21

Scope: Treat topics in 6.7.2.1, open issues and corrections, in particular parts of R2-2003809 that are not treated on-line.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

* [AT109bis-e][026][IIOT] Scheduling Enhancements (CMCC)

Status: Not yet Started, will be started after on-line session April 21

Scope: Treat topics in 6.7.2.2, open issues and corrections, in particular parts of R2-2003497 that are not treated on-line.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC. Result to be merged into CRs in other email discussions (e.g. RRC, possibly MAC).

* [AT109bis-e][027][IIOT] RRC (Ericsson)

Status: Started

Scope: Treat topics in 6.7.2.3, include to make CRs.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

Part 2: RRC CRs implementing IIOT decisions from this meeting.

* [AT109bis-e][028][IIOT] Intra-UE prioritization and MAC (Nokia, Samsung)

Scope: Treat topics in 6.7.3.1, based on R2-2003226, started after on-line session April 21 (Nokia) and treat topics in 6.7.3.2 (that do not overlap with 6.7.1), based on R2-2003124, and R2-2002847, started immediately (Samsung).

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC (Nokia, Samsung)

Part 1b: LS to R1 on Intra-UE prioritization (Nokia)

Part 2: Agreeable CR (Samsung)

* [AT109bis-e][029][IIOT] PDCP Duplication and CRs (LG)

Scope: Treat topics in 6.7.4.1, based on R2-2003772, and make CR,

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC, For P1 P2 P7 discussion expected to start after on-line session April 21. Discussion on other proposals/issues can start immediately.

Part 2: Implement this meetings agreements in CR

* [AT109bis-e][030][IIOT] Ethernet Header Compression (Intel)

Scope: Treat topics in 6.7.4.2, based on R2-2003782 and comments.

Part 1: Determine which issues that need resolution, find agreeable proposals, can consider attempt to agree TP. Deadline: April 24 0700 UTC. Result to be merged to PDCP CRs.

* [AT109bis-e][031][IIOT] UE capabilities (Nokia)

Scope: Treat topics in 6.7.6, based on R2-2003793 and comments.

Part 1: Determine which issues that need resolution, find agreeable proposals, can consider TP. Deadline: April 24 0700 UTC.

Part 2: Running CRs (for 38.306, 36.306, 38.822?)

* [AT109bis-e][032][DCCA] RRC (Ericsson)

Scope: Treat topics in 6.10.1, based on R2-2003383, R2-2003789, R2-2003381, R2-2003382 and comments. Discussion on non-controversial issues/proposals that might not need to be treated on-line can start immediately.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC.

Part 2: CRs capturing agreements from this meeting (incl results from other discussions).

* [AT109bis-e][033][DCCA] UE capabilities (Huawei)

Scope: Treat topics in 6.10.2, based on R2-2003707 and comments. Discussion on non-controversial issues/proposals that might not need to be treated on-line can start immediately. Others can start after on-line session.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC (can be extended). Way forward for issues that cannot be resolved at this meeting.

Part 2: Running CRs capturing agreements from this meeting.

* [AT109bis-e][034][DCCA] NR-NR DC (Huawei, Apple)

Scope: Treat topics in 6.10.3, Start immediately with R2-2003656 and R2-2003657. Wait for on-line discussion for others.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

Part 2: Reply LS on uplink power control for NR-NR Dual-Connectivity (Apple), Scope: attempt to converge sufficiently for a Reply LS to R1, CB on-line Week2.

* [AT109bis-e][035][DCCA] Early Measurement Reporting (Ericsson)

Contents merged with [032]

CANCELLED

* [AT109bis-e][036][DCCA] Fast Scell Activation (OPPO)

Scope: Treat general and RRC topics in 6.10.5, based on R2-2003770 and comments. Can start discussion on non-controversial proposals immediately, if any. Wait for on-line discussion for others.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

* [AT109bis-e][037][DCCA] MAC (OPPO)

Scope: Treat MAC proposals for DCCA

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

Part 2: Agreeable CR

* [AT109bis-e][038][DCCA] MCG SCell and SCG Configuration with RRC Resume (ZTE)

Scope: Treat topics in 6.10.6, based on R2-2003812 and comments. Can start discussion on non-controversial proposals immediately, if any. Wait for on-line discussion for contriversial proposal.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

* [AT109bis-e][039][DCCA] Fast MCG Link Recovery (Ericsson)

Scope: Treat topics in 6.10.6, based on R2-2003812 and ASN.1 issues and RRC corrections. Can start discussion on non-controversial proposals immediately, if any. Wait for on-line discussion for controversial proposal.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

* [AT109bis-e][040][NR16 Other] FDD band capability signalling for uplink sharing (QC)

Scope: Treat papers above on FDD band capability signalling for uplink sharing

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

* [AT109bis-e][041][NR16 Other] MPE enhancements FR2 (Nokia)

Scope: Treat papers above on MPE enhancements FR2

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

* [AT109bis-e][042][NR16 Other] P bit for Single Entry PHR (OPPO)

Scope: Treat papers above on P bit for Single Entry PHR

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

* [AT109bis-e][043][NR16 Other] P bit for Single Entry P Bandwidth combination set to asymmetric bandwidths (Huawei)

Scope: Treat papers above on Bandwidth combination set to asymmetric bandwidths

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

* [AT109bis-e][044][NR16 Other] Support for ECN in 5GS (Qualcomm)

Scope: Treat papers above on support for ECN in 5GS

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

* [AT109bis-e][045][NR16 Other] UL TX Switching-NR\_FR1 (China Telecom)

Scope: Treat papers above on UL TX Switching-NR\_FR1. If convergence is difficult, this may be treated on-line.

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

* [AT109bis-e][046][NR16 Other] EN-DC FDD+TDD HPUE (Huawei)

Scope: Treat papers above on EN-DC FDD+TDD HPUE.

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

* [AT109bis-e][047][NR16 Other] NR HST (CMCC)

Scope: Treat papers above on NR HST. If convergence is difficult, this may be treated on-line.

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

* [AT109bis-e][048][TEI16] 5G Indicator (Intel)

Scope: Treat papers above on 5G indicator. If convergence is difficult, this may be treated on-line.

Wanted Outcome: Agreed solution in Agreed-in-principle CRs

Deadline: April 28 0700 UTC

* [AT109bis-e][049][TEI16] Need for Gap (Mediatek)

Scope: Treat papers above on Need for Gap. If convergence is difficult, this may be treated on-line. Keep this simple please.

Wanted Outcome: Agreed solution, if possible Agreed-in-principle CRs

Deadline: April 28 0700 UTC

* [AT109bis-e][050][TEI16] Overheating (Huawei)

Scope: Treat papers above on Overheating.

Wanted Outcome: Agreed solution, if possible Agreed-in-principle CR(s)

Deadline: April 28 0700 UTC

* [AT109bis-e][051][TEI16] EN-DC cell reselection (CMCC)

Scope: Treat papers above on EN-DC cell reselection.

Wanted Outcome: Agreed solution, if possible Agreed-in-principle CR(s)

Deadline: April 28 0700 UTC

* [AT109bis-e][052][TEI16] Missing reportAddNeighMeas (Nokia)

Wanted Outcome: Agreed-in-principle CR

Deadline: April 28 0700 UTC

* [AT109bis-e][053][TEI16] LCP Mapping Restrictions (Nokia)

Scope: Treat papers above on LCP Mapping Restrictions.

Wanted Outcome: Agreed solution, if possible Agreed-in-principle CR(s)

Deadline: April 28 0700 UTC

* [AT109bis-e][054][TEI16] Secondary DRX (Ericsson)

Scope: Treat papers above on Secondary DRX.

Wanted Outcome: Agreed solution, if possible Agreed-in-principle CR(s)

Deadline: April 28 0700 UTC

* [AT109bis-e][055][TEI16] eCall over NR (Huawei)

Scope: Treat papers above on eCall over NR.

Wanted Outcome: Agreed solution, if possible Agreed-in-principle CR(s)

Deadline: April 28 0700 UTC

* [AT109bis-e][056][OdSIBconn] On demand SI Open issue (Ericsson)

Scope: Treat papers under 6.21, by treating R2-2003204, R2-2003203 and taking into account comments. SIB9 should not be discussed until IIOT WI has made some conclusions.

Part 1: Agreed Solutions, Deadline: April 24 0700 UTC (can be extended if need)

Part 2: Agreed-in-principle CR(s)

* [AT109bis-e][056][OdSIBconn] On demand SI Open issue (Ericsson)

Scope: Treat papers under 6.21, by treating R2-2003204, R2-2003203 and taking into account comments. SIB9 should not be discussed until IIOT WI has made some conclusions.

Part 1: Agreed Solutions, Deadline: April 24 0700 UTC (can be extended if need)

Part 2: Agreed-in-principle CR(s)

* [AT109bis-e][057][URLLC] RRC L1 Configuration (Huawei)

Scope: Treat papers under 6.22.2,

Wanted outcome: Agreed-in-principle RRC CR,

Deadline: April 29 0700 UTC (rapporteur may introduce intermediate deadline if needed)

* [AT109bis-e][058][URLLC] MAC remaining issues(Huawei)

Scope: Treat papers under 6.22.3, and the MAC impact from R2-2003612

Wanted outcome: Agreed-in-principle MAC CR,

Deadline: April 29 0700 UTC (rapporteur may introduce intermediate deadline if needed)

* [AT109bis-e][059][NR15] LTE changes related to NR (Ericsson, CATT, Google, Nokia)

Scope: Treat all docs under AI 5.4.2

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

* [AT109bis-e][060][NR16] MAC eLCID and RACH stopping (LG, Mediatek)

Scope: treat R2-2003024 and R2-2002931

Wanted outcome: if agreement can be reached, one or two in-principle-agreed CRs.

Deadline: April 29 0700 UTC

* [AT109bis-e][061][NR16] LS on Conflicting configurations (Huawei)

Scope: Based on R2-2003626 and discussion, make an LS to R1 asking about intentions whether potentially conflicting/potentially similar features can be or are intended to be configured together.

Intended outcome: Approved LS

Deadline: April 29

* [AT109bis-e][062][NR15] LS on FR2 Fallbacks (Mediatek)

Scope: Reply LS to R4, explaining the situation in R2 (could explain also why we have not been able to converge), ask questions that would/could be relevant to technical solution

Intended outcome: Approved LS

Deadline: April 28 0700 UTC

* [AT109bis-e][063][NR15] SRS capability for SRS-only SCell (Huawei)

Scope: Treat R2-2003443, R2-2003444, R2-2003445, R2-2002574

Intended outcome: Agreed-in-principle CRs

Deadline: April 29 0700 UTC

* [AT109bis-e][064][NR15] XDD FRX differentiation (Qualcomm)

Scope: Reply LS to R1, In this context, clarify the meaning of/how current signaling works. Determine whether clarifications to current TS is needed. Can discuss how to extend if/when needed.

Intended outcome: Approved LS, Report and/or clarification CR (if agreed).

Deadline: April 29 0700 UTC

* [AT109bis-e][065][NR RIL] DiscMail1 (Ericsson)
* [AT109bis-e][066][NR RIL] DiscMail2 (Huawei)
* [AT109bis-e][067][NR RIL] DiscMail3 (ZTE)
* [AT109bis-e][068][NR RIL] DiscMail4 (Huawei)
* [AT109bis-e][069][NR RIL] DiscMail5 + DiscMail6 (ZTE)
* [AT109bis-e][070][NR RIL] DiscMail7 + DiscMail9 (vivo)
* [AT109bis-e][071][NR RIL] DiscMail10 (Leonovo)
* [AT109bis-e][072][NR RIL] DiscMail11 + DiscMail12 (Ericsson)

Scope: Discussion and implementation of review issues.

Wanted outcome: a) Agreed RIL Status update in the email discussion report b) Agreed ASN.1/procedure text proposal included in the email discussion report.  
After email discussion report is agreed, the TPs will be included in the ASN.1 Review file, for the continued ASN.1 review.

Deadline: Email discussion Stop at EOM, April 30 (short extension 1 week could be considered if needed).

* [AT109bis-e][073][NR ASN1] Main session issues (Ericsson)

Scope: Discuss general issues, e.g. issues raised in the ASN.1 main session.

One main topic is to agree on general principles on list handling.

Wanted outcome: a) Agreed general principles for list handling, b) identify existing RILs as well as other problematic lists c) progress also other general issues from ASN.1 main session  
After email discussion report is agreed, the TPs will be included in the ASN.1 Review file, for the continued ASN.1 review

# 1 Opening of the meeting

AI1 and 1.x are treated by email, in discussion [000] (pre-allocated).

**This e-Meeting**

- This e-Meeting will follow 3GPP principles for e-Meetings, e.g. an e-Meeting is an ad-hoc meeting that do not count towards a company’s voting rights.

- RAN2 109bis electronic has full decision power, i.e. full decision power to make agreements and approvals according to RAN WG2 terms of reference, without any need to ratify decisions at a later RAN2 or other meeting.

- There will be some more leeway than usual to re-discuss or post-change agreements made at R2 109bis electronic.

- Descriptions on how this meeting is conducted can be found in tdoc on RAN2 109bis-e Methods and Guidance under agenda item 2.4 below

## 1.1 Call for IPR

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| --- |
| 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 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 (https://www.etsi.org/images/files/IPR/etsi-ipr-form.doc) |

NOTE: IPRs may be declared to the Director-General or Chairman of the SDO, but not to the RAN WG2 Chairman.

## 1.2 Network usage conditions

Not applicable

## 1.3 Other

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| In accordance with the Working Procedures it is reaffirmed that:  (i) compliance with all applicable antitrust and competition laws is required;  (ii) timely submissions of work items in advance of TSG or WG meetings are important to allow for full and fair consideration of such matters; and  (iii) the chairman will conduct the meeting with strict impartiality and in the interests of 3GPP |

Note on (i): In case of question please contact your legal counsel.

Note on (ii): WIDs don’t need to be submitted to the RAN2 meeting and will typically not be discussed here either.

## 1.4 Statement Regarding Engagement with Companies Added to the U.S. Export Administration Regulations (EAR) Entity List in 3GPP Activities

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| *Updated 2019-10-10*  **1. Public Information is Not Subject to EAR**  3GPP is an open platform where all contributions (including technology protected or not by patent) made by the different Individual Members under the membership of each respective Organizational Partner are publicly available. Indeed, contributions by all and any Individual Members are uploaded to a public file server when received and then the documents are effectively in the public domain.  In addition, since membership of email distribution lists is open to all, documents and emails distributed by that means are considered to be publicly available.  As a result, information contained in 3GPP contributions, documents, and emails distributed at 3GPP meetings or by 3GPP email distribution lists, because it is made available to the public without restrictions upon its further dissemination, is not subject to the export restrictions of the EAR.  Meeting minutes are maintained for 3GPP meetings. Such meeting minutes for 3GPP meetings are made available to the public without restrictions upon its further dissemination. As a result, information, including information conveyed orally, contained in 3GPP meetings is not subject to the export restriction of the EAR; this would include information conveyed during side meetings that may occur during the main meetings, if these meetings are open to any participants and the results of all said meetings are publicly available without restrictions upon their further dissemination.  **2. Non-Public Information**  Non-public information refers to the information not contained or not intended to be contained in 3GPP contributions, documents or emails. Such non-public information may be disclosed during informal meetings, exchanges, discussions or any form of other communication outside the 3GPP meetings and email distribution lists, and may be subject to the EAR.  **3. Other Information**  Certain encryption software controlled under the International Traffic in Arms Regulations (ITAR), even if publicly available, may still be subject to US export controls other than the EAR.  **4. Conduct of Meetings**  The situation should be considered as "business as usual" during all the meetings called by 3GPP.  **5. Responsibility of Individual Members**  It should be remembered that contributions, meetings, exchanges, discussions or any form of other communication in or outside the 3GPP meetings are of the accountability, integrity and the responsibility of each Individual Member. In addition, Individual Members remain responsible for ensuring their compliance with all applicable export control regulations, including but not limited to EAR.  Individual Members with questions regarding the impact of laws and regulations on their participation in 3GPP should contact their companies’ legal counsels. |

[000]

- Chairman: By email [000], Chairman asked for attention on all items under AIs 1, 1.1, 1.3, 1.4. No Comments were received.

# 2 General

AI2 and 2.x are treated by email, in discussion [000]. (pre-allocated)

**Instructions - General**

Priority: In such cases that prioritization is needed, essential maintenance corrections has highest priority, followed by R16 Closing of WI Open Issues, followed by R16 Corrections / Stage-3 review solutions.

Incoming LS’es are handled. As usual it is up to session chair which ones to treat (and related tdocs).

R15 and earlier: For R15 and earlier releases, documents on important and urgent issues shall be submitted and treated. No text enhancements without behavioural or functional change.

R16 Open Issues, Stage-3 review: R16 Input to R2#109bis-e to focus on issues: WI open issues and Stage-3 review issues. It is important that you work with WI rapporteurs and WI CR rapporteurs on Open issues.

R16 Email Discussions to R2#109bis-e: No tdocs except email discussions will be treated on topics that are treated in email discussion. You need to participate in email discussions and contribute your views there. An unresolved issue that seems to require discussion and separate treatment can be assigned to a company, and this company can then submit one tdoc on this issue that do not count against tdoc limitation. Other companies are encouraged to cooperate with the assigned company rather than submitting own input. This is applicable both to e.g. ASN.1 review category 2 or 3 issues and/or issues relating to other specifications.

R16 Small Corrections, non-RRC: For small non-controversial corrections, please if possible contact the CR Rapporteur directly to include the correction. The CR Rapporteur can list the contributing company name within brackets on the explanatory parts of the CR cover sheet, for proper credit (however for changes commented by multiple companies the rapporteur may choose to not do this). If required due to US EAR, such communication can use the official R2 email discussion [Post109e#53]. For RRC Small Corrections, please for RRC rapporteurs ASN.1 category 0/1 instructions.

R16 CRs: No company specific CRs. For all R16 WIs, “big” CRs similar to running CRs per WI and TS are maintained by current/previous running CR rapporteurs. Companies may input TPs or draft CRs, to be merged into the big CRs if agreed. R16 CRs do not need an impact analysis.

R16 TEI: Low priority for new proposals. Most likely no new proposal will be treated.

R16 UE capabilities: On L1 and Radio features, RAN2 waits for feature list input from RAN1 and RAN4. Can anyway evolve running CRs to the extent possible/reasonable, e.g. on R2 feature scope.

R17: Will not be treated

**Instructions - Summary of tdocs**

In particular for R16, for AIs where tdoc submission is expected, the Intention is to treat summaries that summarize contents of submitted tdocs rather than submitted tdocs. Tdocs that are covered by a summary are to be noted if the summary is treated.

Where indicated in the agenda or later in chair notes, the tdocs submitted to a sub-agenda item or on a specific sub-topic, are summarized in a summary tdoc by an appointed rapporteur. It is the task of the rapporteur to reflect submitted proposals in a neutral way, group, merge and structure to facilitate easy treatment. There may be email discussion checking for each summary that may start as soon as there is a first summary draft, e.g. before submission. When such email discussion takes place during the tdoc review week it is considered a) the purpose is mainly to check correctness and get immediate comments/suggestions b) ambition level is best effort.

|  |
| --- |
| **Guidance on RAN2 RRC Activities before, during and after April meeting**  NR and EUTRA follows the same principal planning for RRC CRs and ASN.1 review. R2-2001709 contains an endorsed high level overview plan. Some more details are provided here. Even further details will be provided by the RRC TS Rapporteurs.   1. **General principles** 2. Until April meeting, we will run both ASN.1 Review and WI-specific email discussions in parallel. 3. The ASN.1 Review will be kicked-off as soon as Rel-16 spec is available. Detailed guidance for the ASN.1 review process will be provided by the RRC specification Rapporteurs 4. **UE capabilities** are discussed as covered by specific WI discussions. It is not planned to include UE capabilities for ASN.1 review for April. RIL issues can still be considered best effort for the WIs that included some UE capability contents in the March specifications. 5. **After April meeting**, RAN2 expects to have the following RRC CRs:    1. The ASN.1 Review file, with RILs (as usual after ASN.1 review). This is a “mega-CR”, covering the complete Rel-16 RRC specification.    2. One RRC CR per WI (assumption), including contents for closing WI open issues, and Category 3 issues, which are WI specific (see below) . RIL items/comments are added in the ASN.1 Review file to refer to the tdoc number of the WI specific CRs. The intention is that RIL issues of the ASN.1 review file shall indicate all RRC changes, also the ones done in WI-specific CRs. 6. **Issue classification**   For reference, below there is an Issue Classification (similar to what RAN2 has used earlier in ASN.1 reviews), but now with **guidance** on during which April meeting sessions to handle each issue during RAN2 April 2020 meeting:   1. **Trivial** e.g. editorials, commas, colon, misspelling, missing/ double spaces, italics etc. 2. **Minor** e.g. quite straightforward changes e.g. correction/ addition of specification references or sub-clauses 3. **ASN.1 session** **issue** e.g. ASN.1 issue e.g. related to need codes, extensibility, alternative encoding, ASN.1/ guidelines, general protocol (consistency) issue or issue affecting more than one WI 4. **WI session issue i**.e. an issue that is not purely ASN.1 but has some impact on functionality but only affecting a single WI.   Issues of class 0 and 1 are provided to ASN.1 review moderator, who captures changes within ASN.1 review file with best effort i.e. not highest priority in accordance with guidance provided at ASN.1 review kick-off. This is applicable also to issues found in WI-specific discussions.   1. **WI specific email discussions before April meeting** 2. Each WI RRC Rapporteur is expected to progress known RRC open issues (FFSs, Editor’s Notes etc) in WI-specific RAN2 email discussions until RAN2 April meeting. 3. The result is submitted in WI-specific RRC draft CRs to RAN2 April meeting. 4. Main focus is to resolve the already known open issues, but if discovered, companies may also raise new major functional issues. 5. The open issues managed in these discussions are managed by WI RRC rapporteur. No ASN.1 review RIL handling are used in these email discussions. Note that it is still important to take note of such open issues in the ASN.1 review work to avoid double work. Open issues lists should be made available. Note that Class 0, 1, and 2 issues, if discussed, shall be forwarded to RRC TS rapporteurs / ASN.1 session, for capture in the ASN.1 review file. 6. If a Class 3 issue cannot be resolved during the email discussion, it may be left open or one company can be assigned to address the issue in the meeting by tdoc (without counting towards tdoc limitation) 7. **ASN.1 Review until April meeting** 8. ASN.1 review on the full RRC March specifications will be kicked off when RRC specifications are published. 9. The details on the ASN1 Review process (entering RILs, formats, macros, reporting Class 0/Class 1 issues etc) will be provided before the ASN.1 Review is kicked-off. 10. Companies are asked to provide Class 2 issues and Class 3 issues discussed in the ASN.1 review email discussion via RILs, in the same way as usual.     1. For WIs without RRC email discussion, class 3 issues are raised during ASN.1 review e-mail (for WIs with RRC email discussion, such issues are preferably handled within concerned e-mail as open issue without RIL) 11. If an ASN.1 review issue Class 2 or 3 is not resolved during the email discussion, it may be left open or one company can be assigned to address the issue in the meeting by tdoc (without counting towards tdoc limitation) 12. **Sessions in RAN2 April meeting** 13. **WI-specific sessions**     1. WI-specific RRC draft CRs and Class 3 issues will be handled at WI-specific sessions.     2. As a result of the session, the **session minutes** indicates per RRC issue/change whether        1. the RRC change is to be inserted into the ASN.1 Review file (following the process for inserting into the ASN.1 review file, i.e. with a RIL comment) or        2. the RRC change remains in the (WI-specific) CR A RIL item/comment is added to the ASN.1 Review, to refer to the tdoc number of the (WI-specific) CR. Note that RIL issues from WI specific discussions that are decided in WI specific session may be added to the ASN.1 review file after agreement.     3. WI RRC Rapporteur is responsible for and coordinates the insertion of RILs related to WI specific CR into the ASN.1 Review file with the ASN.1 Review Moderator. 14. **ASN.1 Review sessions (separate for NR and LTE)**     1. The ASN.1 Review sessions (for NR and LTE) will handle Class 2 issues (according to ASN.1 review process). 15. **Actions expected by companies before April meeting** 16. Contribute WI specific open issues to the WI specific email discussions. Note that these emails aim to handle class 3 type of issues. 17. Contribute to the ASN.1 Review (focus should be on issues **essential to freeze the ASN.1** i.e. ensure that signaling is complete, extensible, releasable, and that associated handling seems clear and complete.)     1. Enter RIL issues for Class 2 issues and, for WIs without RRC e-mail discussion, Class 3 issues.     2. For class 3 issues specific to single WI, avoid double work (e.g. coordinate with WI-specific RRC Rapporteur). (WI/functional open issues and their resolutions are only referred to in ASN.1 review file after agreement.) 18. Report Class 0 and Class 1 issues, to be included in ASN.1 Review File (ASN.1 Review Moderator is responsible). The actual update of the ASN.1 Review file might be postponed until after April RAN2 meeting (not critical activity) |

Note: Time Budget Comments remain in this document only for reference. They are not applicable for R2 109bis-e.

[000]

- Chairman: By email [000], Chairman asked for attention on all items under AI 2. No Comments were received.

## 2.1 Approval of the agenda

R2-2002500 Agenda for RAN2#109bis-e Chairman agenda Late

* [000] Approved

## 2.2 Approval of the report of the previous meeting

R2-2002501 RAN2#109-e Meeting Report MCC report Late

* [000] Approved

## 2.3 Reporting from other meetings

Report from RP 87e

1. 3GPP release timeline on RP-200493 was endorsed.
2. The following R16 WIs declared 100% for Core part: eURLLC, SRVCC 5G to 3G, LTE DL MIMO, LTE based 5G terrestrial Broadcast, LTE NAVIC. In addition RACS has no remaining open issues in R2.
3. Mandatory support for full rate integrity protection was discussed. No Conclusions. This issue will be revisited in the June RP. Until then, this topic do not need to be treated in in WGs.
4. DC CA fallbacks for FR2 was discussed briefly. Progress expected in R2 in the next quarter.
5. Feedback from FEB e-Meetings is collected in RP-200490 (for information).
6. UE capabilities was discussed and is summarized in RP-200502 (for information).
7. IAB: Task to work on which mandatory R15 features can be optional for IAB, RP-200501

## 2.4 Others

R2-2003824 RAN2 109bis-e e-meeting Methods and Guidance Chairman discussion

* [000] Endorsed

# 3 Incoming liaisons

Note: LSs are moved to the respective agenda items if any.

AI3 is treated by email, in discussion [000]. (pre-allocated)

General

R2-2002519 LS on updated Rel-16 LTE and NR parameter lists (R1-2001479; contact: Qualcomm) RAN1 LS in Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core, LTE\_DL\_MIMO\_EE-Core, LTE\_terr\_bcast-Core, NR\_2step\_RACH-Core, NR\_unlic-Core, NR\_IAB-Core, 5G\_V2X\_NRSL-Core, NR\_L1enh\_URLLC-Core, NR\_IIOT-Core, NR\_eMIMO-Core, NR\_UE\_pow\_sav-Core, NR\_pos-Core, NR\_Mob\_enh-Core, LTE\_NR\_DC\_CA\_enh-Core To:RAN2, RAN3

* [000] Noted

R2-2002547 LS/o on synchronization of Y.DNI-fr “Framework and Requirements of Decentralized Trustworthy Network Infrastructure” in Q2/13 (SG13-LS157; contact: China Telecom, Huawei) ITU-T SG13 LS in To:IEEE, ETSI, IETF, 3GPP

* [000] Noted

R17 Treated

R2-2002922 [DRAFT] Response LS on the “LS OUT on Location of UEs and associated key issues” THALES LS out To:cyril.michel@thalesaleniaspace.com Cc:RAN3, SA3-LI

Treated in [000]. Reply to R2-2000054

* [000] Revised in R2-2004190

R2-2004190 [DRAFT] Response LS on the “LS OUT on Location of UEs and associated key issues” THALES LS out To: Cc:RAN3, SA3-LI

* [000] Approved in R2-200xxxx

R17 Not Treated

R2-2002536 Reply LS on UAV positioning (S1-201089; contact: InterDigital) SA1 LS in To:SA6 Cc:SA2, RAN1, RAN2

R2-2002539 LS on 5GC assisted cell selection for accessing network slice (S2-2001728; contact: ZTE) SA2 LS in Rel-17 FS\_eNS\_Ph2 To:SA1, RAN2, RAN3

R2-2002546 LS on Requirements on positioning for UAS (S6-200269; contact: InterDigital) SA6 LS in Rel-17 FS\_UASAPP To:SA1 Cc:SA2, RAN2

R2-2002548 Reply LS to extend the scope of eV2X (SP-191379; contact: Telecom Italia) SA LS in Rel-17 FS\_eV2XARC\_Ph2 To:5GAA WG4 Cc:SA2, SA1, RAN, RAN2

R2-2002542 Response LS on the “LS OUT on Location of UEs and associated key issues” (S3i200056; contact: Rogers) SA3-LI LS in Rel-17 FS\_5GSAT\_ARCH To:SA2, RAN2, RAN3

# 4 EUTRA corrections Rel-15 and earlier

See Appendix A for reference to Work items, work item codes and WIDs.

No documents should be submitted to 4. Please submit to 4.x

NOTE For R2 109e for R15 and earlier releases, only documents on important and urgent issues shall be submitted and treated. No text enhancements without behavioural or functional change.

## 4.1 NB-IoT corrections Rel-15 and earlier

Documents in this agenda item will be handled in a break out session. Common NB-IoT/eMTC parts treated jointly with 4.2.

This agenda item may not be treated during the e-meeting. No web conference is planned for this agenda item

R2-2003245 Optimisation on trigger for dedicated SR with HARQ-ACK ZTE Corporation, Sanechips, MediaTek Inc. discussion Rel-15 LTE\_eMTC4-Core

R2-2003246 Clarification on RLC UM SN size for NB-IoT Huawei, HiSilicon CR Rel-15 36.322 15.3.0 0145 - F NB\_IOTenh2-Core

R2-2003254 Optimisation on trigger for dedicated SR with HARQ-ACK ZTE Corporation, Sanechips, MediaTek Inc. CR Rel-15 36.321 15.8.0 1469 - F LTE\_eMTC4-Core

R2-2003256 Optimisation on trigger for dedicated SR with HARQ-ACK ZTE Corporation, Sanechips, MediaTek Inc. CR Rel-15 36.331 15.9.0 4254 - F LTE\_eMTC4-Core

R2-2003619 Discussion on dedicated frequency search after connection rejection MediaTek Inc. discussion Rel-15 NB\_IOTenh2-Core

R2-2003621 Cell selection on the dedicated frequency after RRC connection rejection for NB-IoT in 36.304 MediaTek Inc. CR Rel-15 36.304 15.5.0 0787 - F NB\_IOTenh2-Core

R2-2003622 Cell selection on the dedicated frequency after RRC connection rejection for NB-IoT in 36.331 MediaTek Inc. CR Rel-15 36.331 15.9.0 4280 - F NB\_IOTenh2-Core

## 4.2 eMTC corrections Rel-15 and earlier

Documents in this agenda item will be handled in a break out session. Common NB-IoT/eMTC parts treated jointly with 4.1.

This agenda item may not be treated during the e-meeting. No web conference is planned for this agenda item

R2-2003189 Correction on reception type combination for eMTC ZTE Corporation, Sanechips, Sequans Communications CR Rel-13 36.302 13.7.0 1204 - F LTE\_MTCe2\_L1-Core

R2-2003190 Correction on reception type combination for eMTC ZTE Corporation, Sanechips, Sequans Communications CR Rel-14 36.302 14.5.0 1205 - A LTE\_MTCe2\_L1-Core

R2-2003222 Correction on reception type combination for eMTC ZTE Corporation, Sanechips, Sequans Communications CR Rel-15 36.302 15.2.0 1206 - A LTE\_MTCe2\_L1-Core

R2-2003228 Correction on reception type combination for eMTC ZTE Corporation, Sanechips, Sequans Communications CR Rel-16 36.302 16.0.0 1207 - A LTE\_MTCe2\_L1-Core

R2-2003342 Adding Reception Type for uplink HARQ ACK feedback for Rel-15 eMTC Huawei, HiSilicon CR Rel-15 36.302 15.2.0 1208 - F LTE\_eMTC4-Core

## 4.3 V2X and Sidelink corrections Rel-15 and earlier

Documents in this agenda item will be handled in a break out session.

R2-2003641 Correction on Uu and PC5 prioritization ASUSTeK CR Rel-15 36.321 15.8.0 1470 - A LTE\_eV2X-Core

R2-2003642 Correction on Uu and PC5 prioritization ASUSTeK CR Rel-14 36.321 14.12.0 1471 - F LTE\_V2X-Core

## 4.4 Positioning corrections Rel-15 and earlier

Documents in this agenda item will be handled by email. No web conference is planned for this agenda item.

## 4.5 Other LTE corrections Rel-15 and earlier

Documents in this agenda item will be handled in a break out session.

A web conference may be used for handling some of the discussions in this WI, and a summary document may be provided by the session chair.

R2-2002619 Correction on SRB duplication OPPO CR Rel-15 36.323 15.5.0 0280 - F LTE\_HRLLC

R2-2002620 Correction on SRB duplication OPPO CR Rel-16 36.323 16.0.0 0281 - A LTE\_HRLLC

R2-2003147 Clarification to UE capabilities for non-contiguous intra-band CA Nokia, Nokia Shanghai Bell CR Rel-12 36.331 12.18.0 4247 - F LTE\_CA-Core, TEI12

R2-2003148 Clarification to UE capabilities for non-contiguous intra-band CA Nokia, Nokia Shanghai Bell CR Rel-13 36.331 13.15.0 4248 - A LTE\_CA-Core, TEI12

R2-2003149 Clarification to UE capabilities for non-contiguous intra-band CA Nokia, Nokia Shanghai Bell CR Rel-14 36.331 14.14.0 4249 - A LTE\_CA-Core, TEI12

R2-2003150 Clarification to UE capabilities for non-contiguous intra-band CA Nokia, Nokia Shanghai Bell CR Rel-15 36.331 15.9.0 4250 - A LTE\_CA-Core, TEI12

R2-2003151 Clarification to UE capabilities for non-contiguous intra-band CA Nokia, Nokia Shanghai Bell CR Rel-16 36.331 16.0.0 4251 - A LTE\_CA-Core, TEI12

R2-2003152 Clarification on codebook-HARQ-ACK-r13 capability for CA with more than 5CCs Nokia, Nokia Shanghai Bell, Qualcomm Incorporated CR Rel-13 36.306 13.12.0 1747 - F LTE\_CA\_enh\_b5C-Core

R2-2003153 Clarification on codebook-HARQ-ACK-r13 capability for CA with more than 5CCs Nokia, Nokia Shanghai Bell, Qualcomm Incorporated CR Rel-14 36.306 14.11.0 1748 - A LTE\_CA\_enh\_b5C-Core

R2-2003154 Clarification on codebook-HARQ-ACK-r13 capability for CA with more than 5CCs Nokia, Nokia Shanghai Bell, Qualcomm Incorporated CR Rel-15 36.306 15.8.0 1749 - A LTE\_CA\_enh\_b5C-Core

R2-2003155 Clarification on codebook-HARQ-ACK-r13 capability for CA with more than 5CCs Nokia, Nokia Shanghai Bell, Qualcomm Incorporated CR Rel-16 36.306 16.0.0 1750 - A LTE\_CA\_enh\_b5C-Core

R2-2003232 Minor changes collected by Rapporteur Samsung Telecommunications draftCR Rel-14 36.331 14.14.0 F MBMS\_LTE\_enh2-Core

R2-2003233 Minor changes collected by Rapporteur Samsung Telecommunications draftCR Rel-15 36.331 15.9.0 F MBMS\_LTE\_enh2-Core, TEI15

R2-2003451 Correction on autonomous measurment gap release Huawei, HiSilicon CR Rel-14 36.331 14.14.0 4267 - F LTE\_meas\_gap\_enh

R2-2003452 Correction on autonomous measurment gap release Huawei, HiSilicon CR Rel-15 36.331 15.9.0 4268 - A LTE\_meas\_gap\_enh

R2-2003453 Correction on autonomous measurment gap release Huawei, HiSilicon CR Rel-16 36.331 16.0.0 4269 - A LTE\_meas\_gap\_enh

R2-2003548 Clarification on UE capability for intra-band non-continuous CA Huawei, Hisilicon CR Rel-10 36.331 10.22.0 4273 - F LTE\_CA-Core

R2-2003549 Clarification on UE capability for intra-band non-continuous CA Huawei, Hisilicon CR Rel-11 36.331 11.19.0 4274 - A LTE\_CA-Core

R2-2003550 Clarification on UE capability for intra-band non-continuous CA Huawei, Hisilicon CR Rel-12 36.331 12.18.0 4275 - F LTE\_CA-Core

R2-2003551 Clarification on UE capability for intra-band non-continuous CA Huawei, Hisilicon CR Rel-13 36.331 13.15.0 4276 - A LTE\_CA-Core

R2-2003552 Clarification on UE capability for intra-band non-continuous CA Huawei, Hisilicon CR Rel-14 36.331 14.14.0 4277 - A LTE\_CA-Core

R2-2003553 Clarification on UE capability for intra-band non-continuous CA Huawei, Hisilicon CR Rel-15 36.331 15.9.0 4278 - A LTE\_CA-Core

R2-2003554 Clarification on UE capability for intra-band non-continuous CA Huawei, Hisilicon CR Rel-16 36.331 16.0.0 4279 - A LTE\_CA-Core

**Withdrawn**

R2-2003390 Minor changes collected by Rapporteur Samsung Telecommunications draftCR Rel-14 36.331 14.14.0 F MBMS\_LTE\_enh2-Core Late Withdrawn

R2-2003391 Minor changes collected by Rapporteur Samsung Telecommunications draftCR Rel-15 36.331 15.9.0 F MBMS\_LTE\_enh2-Core, TEI15 Late Withdrawn

# 5 WI: New Radio (NR) Access Technology

(NR\_newRAT-Core; leading WG: RAN1; REL-15; started: Mar. 17; closed: Jun. 19: WID: RP-191971)

NOTE For R2 109bis-e for R15 and earlier releases, only documents on important and urgent issues shall be submitted and treated. No text enhancements without behavioural or functional change.

## 5.1 Organisational

Incoming LSs, etc.

R2-2002525 Reply LS on Tx DC location (R4-1915361; contact: Huawei) RAN4 LS in Rel-15 NR\_newRAT-Core To:RAN1, RAN2

Treated in email discussion [000] (pre-allocated)

* [000] Noted

## 5.2 Stage 2

### 5.2.1 Stage 2 corrections for TS 38.300

You should discuss your stage 2 CRs with the specification rapporteurs before submission.

### 5.2.2 Stage 2 corrections for TS 37.340

You should discuss your stage 2 CRs with the specification rapporteurs before submission.

**PDCP version change**

* [AT109bis-e][001][NR15] PDCP version change (Ericsson)

Part 1: first rounds of comments, suggest decisions based on initial comments, identify whether there is need for on-line treatment. Deadline: April 23, 0700 UTC

Part 2: if agreeable, expected continuation to agree CRs.

CLOSED

[001] PART 1:

- Chair: Given the number of companies that seems to not handle PDCP version change without handover, the reasonable thing to do is to assume this is the baseline behavior (regardless of what the original intention was). Thank you for your constructiveness.

- Chair: Part 2 can continue.

* [001] Add a UE capability bit indicating if PDCP version change without handover is supported

R2-2003402 Allowing PDCP version change without handover Ericsson, Intel Corporation CR Rel-16 36.331 16.0.0 4262 - A NR\_newRAT-Core

R2-2004191 Allowing PDCP version change without handover Ericsson, Intel Corporation CR Rel-16 36.331 16.0.0 4262 1 F NR\_newRAT-Core

* [001] Agreed-in-principle

R2-2003405 Allowing PDCP version change without handover Ericsson, Intel Corporation CR Rel-16 36.306 16.0.0 1754 - A NR\_newRAT-Core

R2-2004192 Allowing PDCP version change without handover Ericsson, Intel Corporation CR Rel-16 36.306 16.0.0 1754 1 F NR\_newRAT-Core

* [001] Agreed-in-principle

5 tdocs moved from 5.4.2:

R2-2003399 PDCP version change with or without handover Ericsson, Intel Corporation discussion Rel-15 NR\_newRAT-Core

R2-2003400 Allowing PDCP version change without handover Ericsson, Intel Corporation CR Rel-15 36.306 15.8.0 1753 - F NR\_newRAT-Core

R2-2003401 Allowing PDCP version change without handover Ericsson, Intel Corporation CR Rel-15 36.331 15.9.0 4261 - F NR\_newRAT-Core

Move from 5.4.1.1:

R2-2002987 TS 36.331 Clarifying the options for PDCP version change Nokia, Nokia Shanghai Bell CR Rel-15 36.331 15.9.0 4242 - F NR\_newRAT-Core

R2-2002988 TS 37.340 Clarifying the options for PDCP version change Nokia, Nokia Shanghai Bell CR Rel-15 37.340 15.8.0 0190 - F NR\_newRAT-Core

R2-2003685 Clarification on PDCP version change Huawei, HiSilicon CR Rel-15 37.340 15.8.0 0166 2 F NR\_newRAT-Core R2-2001175

R2-2003686 Clarification on PDCP version change Huawei, HiSilicon CR Rel-16 37.340 16.1.0 0198 - A NR\_newRAT-Core

R2-2003687 Clarification on PDCP version change Huawei, HiSilicon CR Rel-15 36.331 15.9.0 4152 2 F NR\_newRAT-Core R2-2001176

R2-2003688 Clarification on PDCP version change Huawei, HiSilicon CR Rel-16 36.331 16.0.0 4282 - A NR\_newRAT-Core

**SPS and CG in DC**

R2-2003539 Correction on MAC description in TS 37.340 Huawei, HiSilicon CR Rel-15 37.340 15.8.0 0196 - F NR\_newRAT-Core

R2-2003540 Correction on MAC description in TS 37.340 Huawei, HiSilicon CR Rel-16 37.340 16.1.0 0197 - A NR\_newRAT-Core

* [002] For both : Contents agreed, expected merge with rapporteur CR next meeting (see comment).

EMAIL DISCUSSION [002] PART1:

- Chair summary. For NR if both DL and UL is intended it would make sense to either use a more general word with less specific meaning or include both SPS and CG, as specific terms has specific meaning regardless of TS. The NR reader may be mislead to believe only DL is included. If this is fixed I assume we indeed fix for both R15 and R16, as otherwise it will look to the reader that we made a functional modification for R16. SO IMHO the change is in principle ok, however I think there is also 100% agreement that it is not particularly important, so it would fit better with a rapporteur cleanup action.

- Sergio 37340 Rapporteur: For "change 1" I agree this could be included in a rapporteur's cleanup CR. However, as it was commented, a 37.340 rapporteur CR is not available at this meeting. This was intentional, to give priority to Rel-16 Stage 3 corrections and ASN.1 review. But I definitely intend to have one for the next meeting. So my preference is to work offline with the proponents and merge (a revision of) the suggested changes in R2-2003539 into a rapporteur's cleanup CR to be submitted for RAN2#110-e

**SCG configuration**

R2-2003689 Clarification on the SCG configuration handing in RRC\_INACTIVE Huawei, HiSilicon CR Rel-15 37.340 15.8.0 0199 - F NR\_newRAT-Core

[002] PART1:

- R2-2003689: Chair Comment: Not agreed. Given the comments it is clear that the proposed change cannot be agreed. However I find it strange that in R16 we have changed the behavior for UEs with no new R16 capability. It looks like a mistake done in the DCCA WI that should be un-done by a R16 DCCA CR.

* [002] Not Pursued
* [AT109bis-e][002][NR15] 37340 corrections (Huawei)

Scope: Treat R2-2003539, R2-2003540, R2-2003689

Part 1: Decision whether to make corrections or not, identify agreeable corrections. Deadline: April 23, 0700 UTC.

Part 2: if agreeable, expected continuation to agree CRs.

### 5.2.3 Positioning

Corrections to both the stage 2 and stage 3 aspects related to positioning. Stage 2 CRs should be discussed with the specification rapporteur before submission.

Documents in this agenda item will be handled in a break out session.

R2-2002913 Clarification on UE Positioning Architecture in 38.305 for Rel-15 CATT draftCR Rel-15 38.305 15.5.0 B NR\_newRAT-Core

R2-2003479 Correction to periodic reporting Huawei, HiSilicon CR Rel-15 37.355 15.0.0 0254 - F NR\_newRAT-Core

R2-2003482 Correction to periodic reporting Huawei, HiSilicon CR Rel-16 37.355 16.0.0 0255 - A NR\_newRAT-Core

## 5.3 Stage 3 user plane

Essential functional corrections.

### 5.3.1 MAC

* [AT109bis-e][003][NR15] MAC Maintenance (Samsung)

Scope: Treat all tdocs for AI 5.3.1

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

CLOSED (Part 2 not needed)

[003]:

- Chair summary: PART1 outcome see R2-2003835. Part 2 is not needed and the email discussion can be closed

R2-2003835 Report of [AT109bis-e][003][NR15] MAC Maintenance (Samsung) Samsung discussion Rel-15 NR\_newRAT-Core

* [003] All agreed (and reflected in the desicions below).

**UL Skipping**

R2-2002515 Reply LS on UL skipping (R1-2001376; contact: vivo) RAN1 LS in Rel-15 NR\_newRAT-Core To:RAN2

* [003] Noted
* [003] For Case 2 in the LS R2-2002515 (i.e. dynamic PUSCH skipping with overlapping CSI/HARQ-ACK on PUCCH), RAN2 assumes MAC does not generate a MAC PDU as in the current MAC specification: no changes to MAC are needed.
* [003] RAN2 waits for further input from RAN1.

R2-2003610 Further discussion on UL skipping for UCI multiplexing Huawei, HiSilicon discussion Rel-15 NR\_newRAT-Core

* [003] Noted

R2-2002780 Discussion on the UL skipping vivo discussion

* [003] Noted

R2-2003594 CR to 38.321 on UCI transmission in the case the overlapping PUSCH transmission is skipped ZTE, Sanechips CR Rel-15 38.321 15.8.0 0731 - F NR\_newRAT-Core

* [003] Not Pursued

**BFR**

R2-2002612 Clarification on the Random Access parameters for BFR Samsung discussion Rel-15 NR\_newRAT-Core

* [003] Noted

R2-2003481 Correction on the RACH parameters for BFR Huawei, HiSilicon CR Rel-15 38.321 15.8.0 0728 - F NR\_newRAT-Core

* [003] Not Pursued

R2-2003484 Correction on the RACH parameters for BFR Huawei, HiSilicon CR Rel-16 38.321 16.0.0 0729 - A NR\_newRAT-Core

* [003] Not Pursued
* [003] RAN2 confirms that *rsrp-ThresholdSSB* in *beamFailureRecoveryConfig*, if configured, is used for CFRA BFR only, as specified in RRC. No changes to MAC or RRC are needed.
* [003] RAN2 confirms that *powerRampingStep*, *preambleReceivedTargetPower*, and *preambleTransMax* in *beamFailureRecoveryConfig*, if configured, are used for CFRA BFR and CBRA BFR, as specified in MAC. No changes to MAC or RRC are needed.

**Others**

R2-2003643 UL grant overridden between configured grant and RAR grant ASUSTeK discussion Rel-15 NR\_newRAT-Core

* [003] Noted
* [003] Regarding the priority between RAR grant and configured grant, RAN2 confirms that RAR grant takes precedence over configured grant (not scheduled by DCI) as in the current MAC specification, so no changes to MAC are needed.

### 5.3.2 RLC

* [AT109bis-e][004][NR15] RLC and PDCP Maintenance (Qualcomm)

Scope: Treat all tdocs for AI 5.3.2 and 5.3.3

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

CLOSED (Part 2 not needed)

R2-2002762 RLC status report truncation Qualcomm Incorporated CR Rel-15 38.322 15.5.0 0032 - F NR\_newRAT-Core

=> Revised n R2-2003766

R2-2003766 RLC status report truncation Qualcomm Incorporated CR Rel-15 38.322 15.5.0 0032 1 F NR\_newRAT-Core

R2-2002767 RLC status report truncation Qualcomm Incorporated CR Rel-16 38.322 16.0.0 0033 - A NR\_newRAT-Core

=> Revised n R2-2003767

R2-2003767 RLC status report truncation Qualcomm Incorporated CR Rel-16 38.322 16.0.0 0033 1 A NR\_newRAT-Core

* [004] the two CRs above are not pursued.

[R2-2004134](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004134.zip) Summary of Offline-004 RLC and PDCP Maintenance Qualcomm Incorporated

* [004] Noted

Email disc [004]:

- Chair: From the email discussion I conclude that there is not sufficient support for the enhancement.

### 5.3.3 PDCP

R2-2002823 Ordering of PDCP SN and RLC SN Qualcomm Incorporated CR Rel-15 38.322 15.5.0 0034 - F NR\_newRAT-Core

R2-2002824 Ordering of PDCP SN and RLC SN Qualcomm Incorporated CR Rel-15 38.323 15.6.0 0044 - F NR\_newRAT-Core

[004]:

- Chair: Companies agrees that the proposed clarification is correct but think it is not needed as it is clear from the detailed procedure.

* [004] the two CRs above are not pursued.

R2-2002825 PDCP Recovery conditions Qualcomm Incorporated CR Rel-15 38.331 15.9.0 1527 - F NR\_newRAT-Core

[004]

- Chair: there is some support to clarify something, however as Huawei point out it was agreed to not capture these details, and if we really want to do something maybe there is more to be done (for other IEs as well). On the other hand, as Mediatek point out, this difficulty has (at least to some extent) been recognized earlier and the result of earlier discussions are captured in the table of 37.340 Annex A.

- Chair: Question to QC and companies supporting to clarify: Are your concerns resolved by applying the information in TS 37.340 Annex A?

- QC: we are fine if a reference to TS 37.340 Annex A, is added into the TS 38.331.

- Huawei: Not sure it has reflected the majority views. Looking at the poll, 5 replied yes, 7 replied No (including 1 tended to agree with No). I think the majority view is clear that this can be up to network implementation. I am also not sure referring to Annex A of 37340 would add any value, as anyway the information in the Annex is available. I think chair was asking there is any real concern, which is also unclear to us.

- LG: We have same understanding with Huawei, i.e., yes is 7 and no is 5. Based on this, we doubt whether Topic-2 summary is correct conclusion of this email discussion.

* [004] not pursued.

### 5.3.4 SDAP

## 5.4 Stage 3 control plane

Essential functional corrections.

### 5.4.1 NR RRC

Including all architecures

#### 5.4.1.1 Connection control

Including L1 Parameters, L2 Parameters, Connection establishment and release, Connection reconfiguration (also reconfig with sync, Handover), Connection resume and release with RRC\_INACTIVE state, Security procedures, re-establishment, RRC processing delay requirements etc.

LS in

R2-2002540 Reply LS on Handling of UE radio network capabilities in 4G and 5G (S3-194488; contact: Intel) SA3 LS in Rel-15 TEI15, 5GS\_Ph1-SEC To:RAN2 Cc:SA2, RAN3

Treated in email discussion [000] (pre-allocated).

* [000] Noted

**L1 Configuration**

* [AT109bis-e][005][NR15] L1 Configuration (Huawei, ZTE)

Scope: Treat R2-2002551, R2-2003537, R2-2003538, R2-2002697, R2-2002698

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For revisions to R2-2003537, R2-2003538 discussion will continue to agree on CRs.

R2-2004116 Summary of offline [005][NR15] L1 Configuration Huawei, ZTE discussion

* [005] Noted

R2-2002508 Reply LS for clarification of PUCCH configuration (R1-2001306; contact: Huawei) RAN1 LS in Rel-15 NR\_newRAT-Core To:RAN2

=> Revised in R2-2002551

R2-2002551 Reply LS for clarification of PUCCH configuration (R1-2001306; contact: Huawei) RAN1 LS in Rel-15 NR\_newRAT-Core To:RAN2

* [005] Noted

R2-2003537 Correction on PUCCH configuration Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1567 - F NR\_newRAT-Core

R2-2003538 Correction on PUCCH configuration Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1568 - A NR\_newRAT-Core

[005]

- Chair: There is support. Can Agree R2-2003537/ R2-2003538 with the additional editorial changes commented in the email discussion.

* [005] R2-2003537/ R2-2003538 are revised

R2-2004135 Correction on PUCCH configuration Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1567 1 F NR\_newRAT-Core

* [005] agreed in principle

R2-2004136 Correction on PUCCH configuration Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1568 1 A NR\_newRAT-Core

* [005] agreed in principle

R2-2002697 Clarification on SRS-CarrierSwitching structure ZTE Corporation, Sanechips, Qualcomm Incorporated discussion Rel-15 NR\_newRAT-Core

* [005] noted

R2-2002698 CR on SRS-CarrierSwitching ZTE Corporation, Sanechips, Qualcomm Incorporated CR Rel-15 38.331 15.9.0 1518 - F NR\_newRAT-Core

[005]

- Chair: There is support for the proposals 2 and 3 in R2-2004116, i.e. the following:

Agree the clarification on typeA field (i.e. only use the first entry) as in R2-2002698.

Agree the clarification on srs-CC-SetIndexlist field for typeB case. Update R2-2002698 by taking into account the comment, i.e. to remove text (i.e. The network does not configure this field for typeB.) in the field descriptions for cc-IndexInOneCC-Set and cc-SetIndex.

- Chair: Ericsson requests for time to check.

- Chair: We can postpone to next meeting, but expect then to agree according to proposals above unless particular issues has been found.

* [005] postponed (to allow time to check)

**L2 Configuration**

* [AT109bis-e][006][NR15] L2 Configuration (Samsung, ZTE)

Scope: Treat R2-2002917, R2-2002948, R2-2002949, R2-2002886

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

CLOSED

R2-2004118 Offline-006: L2 Configuration Samsung, ZTE Corporation, Sanechips discussion

- Chair: Comments and proposals herein has been reused for each document below.

* [006] Noted

R2-2002917 Clarification on the presence of ssb-perRACH-Occasion for the CSI-RS based CFRA ZTE Corporation, Sanechips, Ericsson (Rapporteur) CR Rel-15 38.331 15.9.0 1449 1 F NR\_newRAT-Core R2-2000664

[006]

- Chair: The issue is real, and there is support to make correction.

- Email Rapporteur: Considering the CR is targeted to a Rel-15 function and the change proposed is literally NBC, more time will be allowed for companies to do further check, especially for current implementation on UE side, and the proposed solutions can be discussed in this offline discussion part 2 based on the feedback from internal checking.

- Email Rapporteur: Proposal 1. Select one from the following two solutions to have consistent understanding between RAN1 and RAN2 on the configuration of CSI-RS based CFRA:

- Option 1(RAN2 solution): Change the presence condition of *ssb-perRACH-Occasion* in CFRA into “Cond Mandatory.

- Option 2(RAN1 solution): Confirm the issue from RAN2 aspect, and send LS to RAN1 to double check the issue and also inform RAN1 the potential solution proposed in the CR.

- Chair: We can postpone decisions to next meeting, but we could think one more round whether an LS to R1 should be sent now.

- Rapporteur Reply: we do not need to send an LS now. After RAN2 concludes how to fix it in the next meeting, we will able to know if the LS is needed.

* [006] Postpone to next meeting

R2-2002948 Change of pdcp-Duplication at RRC Reconfiguration Samsung discussion Rel-15 NR\_newRAT-Core

* [006] RAN2 confirms that the value of pdcp-Duplication can be changed by RRC reconfiguration.
* [006] There is support to make a change/clarification.
* [006] Noted

R2-2002949 Clarification on pdcp-Duplication at RRC Reconfiguration Samsung CR Rel-15 38.331 15.9.0 1534 - F NR\_newRAT-Core

* [006] revised

R2-2004119 Clarification on pdcp-Duplication at RRC Reconfiguration Samsung CR Rel-15 38.331 15.9.0 1534 1 F NR\_newRAT-Core

* [006] Agreed in principle

R2-2004140 Clarification on pdcp-Duplication at RRC Reconfiguration Samsung CR Rel-16 38.331 16.0.0 1587 - A NR\_newRAT-Core

* [006] Agreed in principle

R2-2004138 Clarification on pdcp-Duplication at RRC Reconfiguration Samsung CR Rel-15 38.300 15.9.0 0221 - F NR\_newRAT-Core

* [006] Agreed in principle

R2-2004139 Clarification on pdcp-Duplication at RRC Reconfiguration Samsung CR Rel-16 38.300 16.1.0 0222 - A NR\_newRAT-Core

* [006] Agreed in principle

R2-2002886 Corrections on the allowedSCS-List and AllowedServingCells in LogicalChannelConfig Samsung CR Rel-15 38.331 15.9.0 1532 - F NR\_newRAT-Core

[006]:

- Chair: No Support

* [006] not pursued

**Security**

* [AT109bis-e][007][NR15] Security (Qualcomm, Nokia, Huawei)

Scope: Treat R2-2003334, R2-2003335, R2-2003336, R2-2003337, R2-2002985, R2-2002986, R2-2003697, R2-2003698.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

R2-2004204 [AT109bis-e][007][NR15] Security Qualcomm Incorporated

* [007] Noted

R2-2003334 Clarification on avoiding keystream repeat due to COUNT reuse Qualcomm Incorporated, Ericsson, Vodafone, NTT DOCOMO CR Rel-15 38.331 15.9.0 1555 - F NR\_newRAT-Core

R2-2003335 Clarification on avoiding keystream repeat due to COUNT reuse Qualcomm Incorporated, Ericsson, Vodafone, NTT DOCOMO CR Rel-16 38.331 16.0.0 1556 - A NR\_newRAT-Core

R2-2003336 Clarification on avoiding keystream repeat due to COUNT reuse Qualcomm Incorporated, Ericsson, Vodafone, NTT DOCOMO CR Rel-15 36.331 15.9.0 4257 - F TEI15

R2-2003337 Clarification on avoiding keystream repeat due to COUNT reuse Qualcomm Incorporated, Ericsson, Vodafone, NTT DOCOMO CR Rel-16 36.331 16.0.0 4258 - A TEI15

EMAIL DSICUSSION [007], On the 4 tdocs above.

- [007] Chair: this is a clarification, majority support to clarify something, two companes expressed clarly that the specification is already clear nothing needed, one of that addition of the reference can be accepted but not the rest.

* [007] Addition of the reference to the SA3 TS is agreed (TBD if merged with Rapporteur CR or if revised CB next meeting).

Moved from 5.4.2

R2-2002985 Avoiding security risk for RLC AM bearers during termination point change Nokia, Nokia Shanghai Bell, Deutsche Telekom CR Rel-15 38.331 15.9.0 1539 - F NR\_newRAT-Core

R2-2004246  Avoiding security risk for RLC AM bearers during termination point change   Nokia, Nokia Shanghai Bell, Deutsche Telekom       CR   Rel-15 38.331 15.9.0  1539    1          F          NR\_newRAT-Core

* [007] Agreed in principle

R2-2002986 Avoiding security risk for RLC AM bearers during termination point change Nokia, Nokia Shanghai Bell, Deutsche Telekom CR Rel-15 36.331 15.9.0 4241 - F NR\_newRAT-Core

R2-2004247  Avoiding security risk for RLC AM bearers during termination point change   Nokia, Nokia Shanghai Bell, Deutsche Telekom       CR   Rel-15 36.331 15.9.0  4241    1          F          NR\_newRAT-Core

* [007] Agreed in principle

[007]

- Chair: This is a clarification, majority support to clarify something, several companies thought it was not neccesary. All companies that expressed negative views also indicated clarification can anyway be acceptable. There were several comments on the change and the cover sheet.

- Chair: Everyone can accept to Clarifify (something) - seems agreeable. Lets attempt.

* [007] revised

R2-2003697 Potential issue on the Counter Check in (NG)EN-DC and NR standalone Huawei, HiSilicon discussion Rel-15 NR\_newRAT-Core

[007]

- Chair: There is no support for the proposal, and no consensus there is a real issue (several companies think the network can handle this).

* [007] Proposal is not agreed

Not Treated:

R2-2003698 Draft LS to SA3 on potential issue of Counter Check Huawei, HiSilicon LS out Rel-15 NR\_newRAT-Core To:SA3

**Conn Control Miscellaneous I**

* [AT109bis-e][008][NR15] Conn Control Miscellaneous I (Nokia, Ericsson, CATT, Huawei)

Scope: Treat R2-2002681, R2-2002682, R2-2002683, R2-2003071, R2-2003386, R2-2003196, R2-2003197, R2-2002787, R2-2003480, R2-2003483,

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

R2-2002681 Discussion on recursion in RRC Nokia, Nokia Shanghai Bell discussion Rel-15 NR\_newRAT-Core R2-2000856

[008]

- Chair summary: From ASN.1 point of view the recursion is there. Most companies think that for R15 this is not a problem as the intended use case limits recursion level implemented and at least for the DL case the limit to recursion is captured in RRC text. For new cases and general principles, the RRC rapporteur can consider whether there could/should be a general rule for R16.

- Chair: insufficient support for agreement

* [008] Proposal not agreed

R2-2003386 Piggybacking of NAS PDUs including Service Accept Ericsson discussion Rel-15 NR\_newRAT-Core

[008]

- Most companies don’t think P2 is an issue. No agreement on confirm anything.

- Ericsson explains that they are ok with just capturing clarification of P1 in Chair notes.

- Nokia is wondering about the scenario, what problem to address.

- Intel: From RAN2 perspective, as mentioned in the contribution, any NAS PDU that requires joint success/failure can be piggybacked into the RRC Reconfiguration message. However, it is not up to RAN2 on its own to decide whether Service Accept requires joint success failure with the rest of the information in the RRC reconfiguration message. At least RAN2 has not discussed it so far and does not have a good understanding of what Service Accept requires of RAN/AS. There are differences between NR and LTE [truncated]. Take for example the failure case – if the RRC message fails, the piggybacked Service Accept is not delivered. Is that acceptable behaviour from NAS and system point of view? In LTE, we discussed these failure cases and NAS recovery mechanisms with CT1. If there is an issue that motivated the Ericsson paper, it would be better to understand the issue and discuss jointly with (or primarily in) SA2/CT1.

R2-2003196 Correction related to RRC reconfiguration complete Ericsson CR Rel-15 38.331 15.9.0 1543 - F NR\_newRAT-Core

R2-2003197 Correction related to RRC reconfiguration complete Ericsson CR Rel-16 38.331 16.0.0 1544 - A NR\_newRAT-Core

* [008] Both not pursued

R2-2002787 Correction on CSI-ResourceConfig CATT CR Rel-15 38.331 15.9.0 1522 - F NR\_newRAT-Core

* [008] not pursued

R2-2003480 Correction on PUSCH-less uplink carrier Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1564 - F NR\_newRAT-Core

R2-2003483 Correction on PUSCH-less uplink carrier Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1565 - A NR\_newRAT-Core

* [008] Both not pursued

Not Treated:

R2-2002682 Clarification on recursion in RRC messages Nokia, Nokia Shanghai Bell, Apple CR Rel-15 38.331 15.9.0 1456 1 F NR\_newRAT-Core R2-2000857

R2-2002683 Clarification on recursion in RRC messages Nokia, Nokia Shanghai Bell, Apple CR Rel-16 38.331 16.0.0 1514 - A NR\_newRAT-Core

R2-2003071 Clarification on recursion in RRC messages Nokia, Nokia Shanghai Bell, Apple CR Rel-16 36.331 16.0.0 4244 - F NR\_newRAT-Core

**Conn Control Miscellaneous II**

* [AT109bis-e][009][NR15] Conn Control Miscellaneous II (Huawei, Google, China Unicom)

Scope: Treat R2-2003690, R2-2003691, R2-2003692, R2-2003693, R2-2003694, R2-2003695, R2-2003670, R2-2003671, R2-2003778,

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

R2-2003690 Correction on the need for reconfiguration with sync in (NG)EN-DC, NR-DC and NE-DC Huawei, HiSilicon, Ericsson CR Rel-15 38.331 15.9.0 1571 - F NR\_newRAT-Core

[R2-2004269](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004269.zip) Correction on the need for reconfiguration with sync in (NG)EN-DC, NR-DC and NE-DC Huawei, HiSilicon, Ericsson CR Rel-15 38.331 15.9.0 1571 2 F NR\_newRAT-Core

* [009] Agreed in principle

R2-2003691 Correction on the need for reconfiguration with sync in (NG)EN-DC, NR-DC and NE-DC Huawei, HiSilicon, Ericsson CR Rel-16 38.331 16.0.0 1572 - A NR\_newRAT-Core

[R2-2004270](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004270.zip) Correction on the need for reconfiguration with sync in (NG)EN-DC, NR-DC and NE-DC Huawei, HiSilicon, Ericsson CR Rel-16 38.331 16.0.0 1572 1 A NR\_newRAT-Core

* [009] Agreed in principle

[009]

- Chair: Wide support to clarify something. One company expressed a strong view that this is not needed, but didn’t sustain this view when asked to compromise. Conclusion is that these CRs may be agreeable. However there were lots of detailed comments that need to be taken into account.

R2-2003692 Correction on reestablishRLC Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1573 - F NR\_newRAT-Core

R2-2003693 Correction on reestablishRLC Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1574 - A NR\_newRAT-Core

[009]

- Chair: There was not enough support in first round, so the preliminary conclusion is that these CRs are not pursued. However the rapporteur want to continue to clarify details of expected network behaviour in the email discussion.

R2-2003694 Clarfication on Scell release Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1415 2 F NR\_newRAT-Core R2-2001186

R2-2003695 Clarfication on Scell release Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1575 - A NR\_newRAT-Core

[009]

- Chair: There was not enough support in first round, so the preliminary conclusion is that these CRs are not pursued. However the rapporteur explains this to be an IOT issue with a misbehaving network and want to continue to clarify details of expected network behaviour in the email discussion.

R2-2003670 Discussion on radio bear configuration in MR-DC Google Inc. discussion Rel-15 NR\_newRAT-Core

* [009] postponed (37340 corr)

[009]

- Chair: The proposals in this document are not agreed. The discussion continues for one more round to see whether to correct 37340 instead.

- Rap: Proposal to postpone.

R2-2003244 Clarification on the using of RRCSetup in 38.331 China Unicom, Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1545 - F NR\_newRAT-Core

=> Revised in R2-2003778

R2-2003778 Clarification on the using of RRCSetup in 38.331 China Unicom, Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1545 1 F NR\_newRAT-Core

- Chair: what about mirror R16 CR?

* [009] contents is agreed, merged with Rapporteur CR.

Not treated:

R2-2003671 Correction to RadioBearerConfig Google Inc. CR Rel-15 38.331 15.9.0 1570 - F NR\_newRAT-Core

Further Enhancements – Not Treated

R2-2002786 Fully Utilize of RACH Preamble Distribution CATT CR Rel-15 38.331 15.9.0 1521 - F NR\_newRAT-Core

**Withdrawn**

R2-2002763 Clarification on the presence of ssb-perRACH-Occasion for the CSI-RS based CFRA ZTE Corporation, Sanechips, Ericsson (Rapporteur) discussion Rel-15 38.331 NR\_newRAT-Core R2-2000664 Withdrawn

#### 5.4.1.2 RRM and Measurements and Measurement Coordination

Including late drop.

* [AT109bis-e][010][NR15] Measurements (Huawei, Nokia)

Scope: Treat all docs under AI 5.4.1.2

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC (chair comment: expect R2-2002692 and 2693 to be easy agreements as we already have agreed them).

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

R2-2004113 Summary of [AT109bis-e][010][NR15] Measurements (Huawei, Nokia) Nokia, Nokia Shanghai Bell, Huawei, HiSilicon

* [010] Noted

**SSB-ToMeasure**

R2-2002692 Clarification for SSB-ToMeasure Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.9.0 1457 1 F NR\_newRAT-Core R2-2000859

R2-2002693 Clarification of SSB-ToMeasure Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.0.0 1516 - A NR\_newRAT-Core

[010] DISCUSSION on 2692 2693

- Chair: On the SSB to measure I am worried that companies put more attention to a possibly non-significant RAN2 confirmation (everyone seems to refer to it) instead of making sure that references to L1 TS are accurate. To my recollection the usage of word “absolute index” in my capture of this RAN2 confirmation is there only to indicate that the bitmap is not related to SMTC, which was a possible misinterpretation voiced by one company that no one agreed with at the time (at R2 108), but the one company anyway required a chair notes confirmation. Looking in 38331 the bitmap IEs refer currently to 38213 and I am not sure whether there is any actual risk for misinterpretation.

- Chair: With this understanding and the presence of opposition, I am leaning towards not agreeing 2692 2693. I can easily change my mind if someone can explain that the proposal resolves an actual ambiguity or if the opponent companies change their mind.

* [010] No Reply, CRs not pursued

**Inter-RAT SFTD**

R2-2003701 Correction to inter-RAT SFTD measurements Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1578 - F NR\_newRAT-Core

R2-2003702 Correction to inter-RAT SFTD measurements Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1579 - A NR\_newRAT-Core

* [010] 1st and 3rd changes are agreed
* [010] revised

R2-2003734 Correction to inter-RAT SFTD measurements Huawei, HiSilicon CR Rel-15 36.331 15.9.0 4285 - F NR\_newRAT-Core

R2-2003735 Correction to inter-RAT SFTD measurements Huawei, HiSilicon CR Rel-16 36.331 16.0.0 4286 - A NR\_newRAT-Core

[010] DISCUSSION on 3734 3735

- Chair: There is some opposition, Samsung, LG saying that the network anyway have to explicitly reconfigure. If that is true, I’d guess the enhancement is not so useful, or what?

- Chair: Is this a potential correction for R16 only? Then the network would know the UE behaviour, or do we need a capability?

* [010] No Reply, CRs not pursued

**Withdrawn**

R2-2003699 Correction to inter-RAT SFTD measurements Huawei, HiSiicon CR Rel-15 38.331 15.9.0 1576 - F NR\_newRAT-Core Withdrawn

R2-2003700 Correction to inter-RAT SFTD measurements Huawei, HiSiicon CR Rel-16 38.331 16.0.0 1577 - A NR\_newRAT-Core Withdrawn

#### 5.4.1.3 System information

* [AT109bis-e][011][NR15] System Information & Other (Huawei, Ericsson, Apple)

Scope: Treat all docs under AI 5.4.1.3 and AI 5.4.1.5

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

**SIB1**

R2-2002818 Clarification on the essential fields in SIB1 Apple CR Rel-15 38.331 15.9.0 1525 - F NR\_newRAT-Core

R2-2002819 Clarification on the essential fields in SIB1 Apple CR Rel-16 38.331 16.0.0 1526 - F NR\_newRAT-Core

[011]

- Chair: Current Essential SI missing only targets the acquisition of MIB and SIB1, i.e. strange radio/transmission/reception situations, so the proposals are not obvious into this category, and cannot really be considered a bug. As an enhancement, there need to be better support for agreement.

* [011] both not pursued
* [011] R2 understands that the network configures *ServingCellConfigCommonSIB* including *uplinkConfigCommon* in *SIB1* when the serving cell should be used for the UE to camp on (captured due to proponent request, there is nothing to be captured in the specifications).

**PWS and MG**

R2-2003283 ETWS and CMAS acquisition during measurement gaps Ericsson, Qualcomm, NTT DOCOMO INC, Nokia, InterDigital discussion Rel-15 NR\_newRAT-Core

[011]

- Chair: Well, it seems that everyone agrees that it may happen that there is overlap between configured measurement gaps and SIB6/SIB7/SIB8 scheduling. One company point out that it is possible for the network to release UE measurement gaps configuration if the network detects this and want to be sure that UEs prioritize SIB6/SIB7/SIB8 reception. Most companies think the priority should be left to UE implementation.

- Chair: In the first round, there was not much support to capture anything. In a second round, the Email rapporteur proposes to capture in a note that this is indeed up to UE implementation.

R2-2003282 Clarification for SIB6, SIB7 and SIB8 acquisition during a measurement gap Ericsson, Qualcomm, NTT DOCOMO INC, Nokia, InterDigital CR Rel-15 38.331 15.9.0 1551 - F NR\_newRAT-Core

R2-2004260   Clarification for SIB6, SIB7 and SIB8 acquisition during a measurement gap           Ericsson, Qualcomm, NTT DOCOMO INC, Nokia, InterDigital      CR        Rel-15   38.331  15.9.0   1551     1           F   NR\_newRAT-Core

* [011] Agreed in principle

R2-2003527 Clarification for SIB6, SIB7 and SIB8 acquisition during a measurement gap Ericsson, Qualcomm, NTT DOCOMO INC, Nokia, InterDigital CR Rel-16 38.331 16.0.0 1566 - A NR\_newRAT-Core

R2-2004261   Clarification for SIB6, SIB7 and SIB8 acquisition during a measurement gap           Ericsson, Qualcomm, NTT DOCOMO INC, Nokia, InterDigital      CR        Rel-16   38.331  16.0.0   1566     1           A   NR\_newRAT-Core

* [011] Agreed in principle

5 tdocs moved here from 4.5:

R2-2003569 Discussion on Need code for CMAS Huawei, HiSilicon discussion Rel-15 TEI15

[011]

- Chair: No support

* [011] Proposals not agreed.

Not treated:

R2-2003570 Correction on Need code for CMAS Huawei, HiSilicon draftCR Rel-15 36.331 15.9.0 F TEI15

R2-2003571 Correction on Need code for CMAS Huawei, HiSilicon draftCR Rel-16 36.331 16.0.0 A TEI15

R2-2003572 Correction on Need code for CMAS Huawei, HiSilicon draftCR Rel-15 38.331 15.9.0 F TEI15

R2-2003573 Correction on Need code for CMAS Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 A TEI15

#### 5.4.1.5 Other

Moved from 5.4.1.1:

R2-2003696 Mandatory presence of a need M field due to a child presence condition Huawei, HiSilicon discussion Rel-15 NR\_newRAT-Core

[011]

- Chair: There was only one company commenting and the comment was negative. Suggestion for R15: Re-label the email discussion to [AT109bis-e][011][NR15] Mandatory presence due to Child presence (Huawei). Part 2 of email discussion [011]: Review the 8 cases in R2-2003696, and determine if any enhanced description is needed for any of them

- Huawei: It was suggested by several companies, also during ASN.1 discussion, that the general principle should be discussed in ASN.1 review, and I don't think a discussion on 8 cases can be any use before the common view is confirmed. Could we have a short discussion on the principle on Monday's NR ASN.1 session, just on the understanding?

- Chair: Ok we can bring it up on-line for R16, but I would expect that any new rule or principle for behaviour can only apply to new R16 cases, and we cannot change/modify any of the current R15 behaviours (of course we can modify the description if required).

* [011] No outcome, discussion postponed

#### 5.4.1.4 Inter-Node RRC messages

* [AT109bis-e][012][NR15] Inter Node Coord (Ericsson, Google)

Scope: Treat all docs under AI 5.4.1.4

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

R2-2003838 Summary of [AT109bis-e][012][NR15] Inter Node Coord Ericsson discussion

* [012] Noted (outcome used below, proposals agreed)

**Coordination on meas IDs**

R2-2003195 Remaining issues on MN-SN measurement coordination in INM Ericsson discussion Rel-15 NR\_newRAT-Core

* [012] Proposals Not Agreed

Move from 5.2.2

R2-2003191 Correction on MN-SN measurements coordination in INM Ericsson CR Rel-15 37.340 15.8.0 0193 - F NR\_newRAT-Core

R2-2003192 Correction on MN-SN measurements coordination in INM Ericsson CR Rel-16 37.340 16.1.0 0194 - A NR\_newRAT-Core

EMAIL DISCUSSION [012]

- Chair: Original contents is not agreed.

- ZTE point out that we forgot to capture previous meeting agreements on inter-Node-coordination. Ericsson think we can use these CRs.

* [012] Revise R2-2003191 and R2-2003192 to capture agreements on the measurement identities coordination agreed in the RAN2#109-e meeting.

[R2-2004249](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004249.zip) Correction on MN-SN measurements coordination in INM Ericsson CR Rel-15 37.340 15.8.0 0193 1 F NR\_newRAT-Core

* [012] Agreed in principle

R2-2004250 Correction on MN-SN measurements coordination in INM Ericsson CR Rel-16 37.340 16.1.0 0194 1 A NR\_newRAT-Core

* [012] Agreed in principle

**RRC version in inter-node**

R2-2003753 Introduce RRC version for source configuration Google Inc. draftCR Rel-16 38.331 16.0.0 F NR\_newRAT-Core, TEI16

* [012] not Pursued

Not Treated:

R2-2003193 Correction on MN-SN measurements coordination in INM Ericsson CR Rel-15 38.331 15.9.0 1541 - F NR\_newRAT-Core

R2-2003194 Correction on MN-SN measurements coordination in INM Ericsson CR Rel-16 38.331 16.0.0 1542 - A NR\_newRAT-Core

### 5.4.2 LTE changes related to NR

* [AT109bis-e][059][NR15] LTE changes related to NR (Ericsson, CATT, Google, Nokia)

Scope: Treat all docs under AI 5.4.2

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

R2-2002645 Correction to shortResumeMAC-I calculation for RRC\_INACTIVE Ericsson CR Rel-15 36.331 15.9.0 4238 - F LTE\_5GCN\_connect-Core

R2-2002597 Correction to shortResumeMAC-I calculation for RRC\_INACTIVE Ericsson CR Rel-16 36.331 16.0.0 4237 - F LTE\_5GCN\_connect-Core

* [059] CRs above not pursued

EMAIL DISCUSSION [059]

- Chair: All companies agree that there is an inconsistency between R2 TS and SA3 TS.

- Email Discussion Part 1 outcome: The CR in R2-2002645 (Calculation of shortResumeMAC-I) is not pursued. RAN2 to discuss if an LS should be sent SA3 to ask them to correct the shortResumeMAC-I calculation in 33.501.

[R2-2004265](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004265.zip) LS on Calculation of ShortResumeMAC-I LS out RAN2

* [059] Approved

R2-2002788 Correction on Release of EN-DC CATT CR Rel-15 36.331 15.9.0 4223 1 F NR\_newRAT-Core R2-2001455

* [059] not Pursued

R2-2003684 UE measurement capability requirements for NR Google Inc. CR Rel-15 36.331 15.9.0 4281 - F NR\_newRAT-Core

[059]

- Email Discussion outcome: Measurement capability requirement for NR should be added in LTE RRC. The CR in R2-2003684 is used as baseline.

- Chair: R16 mirror also.

* [059] revised

[R2-2004262](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004262.zip) UE measurement capability requirements for NR Google Inc. CR Rel-15 36.331 15.9.0 4281 1 F NR\_newRAT-Core

* [059] agreed in principle

[R2-2004263](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004263.zip) UE measurement capability requirements for NR Google Inc. CR Rel-15 36.331 16.0.0 4289 - A NR\_newRAT-Core

* [059] agreed in principle

R2-2003156 Clarification to TTI bundling configuration in NE-DC Nokia, Nokia Shanghai Bell CR Rel-15 36.331 15.9.0 4252 - F NR\_newRAT-Core

R2-2003157 Clarification to TTI bundling configuration in NE-DC Nokia, Nokia Shanghai Bell CR Rel-16 36.331 16.0.0 4253 - A NR\_newRAT-Core

- [059] Chair initial proposal that both are not Pursued.

- [059] Proponent explains that there was not time to provide a full explanation and request to postpone: Explanation: Most companies did not see a use case for the change. The intended use case is voice support in NE-DC. Enabling UE transmits bundled TTI can simply increase the possibility of data reception at the destination for SCG. Otherwise, in case of NE-DC with separate voice bearers (over MCG and SCG) we decrease the successful rate of video delivery. While for LTE-DC it might have no consequences, for early NR deployments we believed E-UTRAN shouldn’t lose the possibility to maintain the voice bearer. In NE-DC, secondary node (eNB) should be allowed to configure TTI bundling for MN terminated SCG bearer. Without the CR, it is not allowed.

* [059] Postponed

### 5.4.3 UE capabilities and Capability Coordination

Including Late Drop

Including outcome of the email discussion [Post109e#24][NR15] Clarification of capabilities with NR-DC and NE-DC (Ericsson). Including outcome of the email discussion [Post109e#25][NR15] SRS Capability report for SRS only Scell (Huawei).

**XDD-FRX Differentiation**

**Treated on-line**

R2-2002505 LS on XDD-FRX Differentiation (R1-1913579; contact: Qualcomm) RAN1 LS in Rel-15 NR\_newRAT-Core To:RAN2 Cc:RAN4

- QC think we need to first clarify the current understanding

* noted

R2-2003454 Discussion on capabilities with XDD-FRX differentiations Huawei, HiSilicon discussion Rel-15 NR\_newRAT-Core R2-2001320

* noted

R2-2002573 xDD FRx split capabilities. Qualcomm Incorporated discussion Rel-15 NR\_newRAT-Core

* noted

Interpreatation of Current signalling = Table 1?

- Docomo agrees with Table1. Oppo agrees as well. ZTE agrees the problematic case is case 6. Vivo agrees. Samsung agrees

- MTK think for case 1, 3 and 8 the settings in the table are not correct. QC agrees, and think the table is conceptual and refeclects what can potentially be set. Huawei have the same comment. ZTE as well. Vivo agrees

- Ericsson think that the case that cannot be supported today is the case 5. Intel agrees.

- Nokia wonders if the table reflects what we should be able to signall.

- Samsung think the cases that cannot be supported don’t need to be supported. Huawei also didn’t find any use case. MTK as well. CATT think we need to check whether there are real cases. QC think there might be cases. Intel agrees we need to check wheter there are new cases

- Ericsson agrees that we shold stick to what we have, and add new signalling for new cases. Think we shold also look at the procedures in 306.

How to change (if found needed)

- Ericsson think new signalling. CATT agrees that this shold be the principle. QC think this is also acceptable. Intel agrees. MTK agrees and think we shold not change the meaning of current signalling.

- Docomo is thinking we should have signalling per FB.

- ZTE wonder how we can have new signalling. If we consider Case 6 is not supported by current signalling, what would the UE then indicate for Case 6.

- Samsung also think this could be per band. Docomo think we also indicated this in the guidline LS.

* In R2 there is no consensus that new cases need to be supported right now. A majority of companies think the signaling could be changed when new specific cases has been identified.
* We intend to reply to R1 LS (QC)
* By Email at meeting, Attempt Clarify how current signaling works, discuss clarifications to the TS. Can discuss how to extend (explain the possible options). Agree LS out.
* [AT109bis-e][064][NR15] XDD FRX differentiation (Qualcomm)

Scope: Reply LS to R1, In this context, clarify the meaning of/how current signaling works. Determine whether clarifications to current TS is needed. Can discuss how to extend if/when needed.

Intended outcome: Approved LS, Report and/or clarification CR (if agreed).

Deadline: April 29 0700 UTC

DISCUSSION EMAIL [064]

- Chair observation: There were different views on how current system works, consensus could not be reached. Rapporteur proposes to continue by email to next meeting.

* [Post109bis-e][NR15] XDD FRX differentiation (Qualcomm)

Scope: First priority, clarify clarify the behaviour of the current UE capability signalling for xDD FRx differentiation, including identification of the problematic case that the current signalling does not allow the UE to signal. Second priority, if progress is good/fast, can discuss which actions should be taken, ways forward.

Intended outcome: Report.

Deadline: Next meeting

R2-2002654 Discussion on XDD FRX difference OPPO discussion Rel-15 38.306

DISCSUSSION P5 6 7

- Samsung think such clarifications is not needed. Qc agrees, and the current signalling. Docomo agrees as well. Oppo think we then need to clarify some N/A in the table in the TS. Huawei think we shouldn’t change.

- Chair: Not much support to change.

* Not agreed

R2-2003274 Ambiguity in fr1-fr2-Add-UE-NR-Capabilities parameter Ericsson, NTT Docomo CR Rel-15 38.331 15.9.0 1549 - F NR\_newRAT-Core

R2-2003275 Ambiguity in fr1-fr2-Add-UE-NR-Capabilities parameter Ericsson, NTT Docomo CR Rel-16 38.331 16.0.0 1550 - A NR\_newRAT-Core

- Nokia support

* Both CRs Agreed in principle

R2-2003455 Draft LS on capabilities with XDD-FRX differentiations Huawei, HiSilicon LS out Rel-15 NR\_newRAT-Core To:RAN1 Cc:RAN4

R2-2003269 Signaling for XDD-FRX differentiation Ericsson discussion

R2-2003270 Signaling for XDD-FRX differentiation (38.331) Ericsson CR Rel-15 38.331 15.9.0 1547 - F NR\_newRAT-Core

R2-2003271 Signaling for XDD-FRX differentiation (38.331) Ericsson CR Rel-16 38.331 16.0.0 1548 - A NR\_newRAT-Core

R2-2003272 Signaling for XDD-FRX differentiation (38.306) Ericsson CR Rel-15 38.306 15.9.0 0278 - F NR\_newRAT-Core

R2-2003273 Signaling for XDD-FRX differentiation (38.306) Ericsson CR Rel-16 38.306 16.0.0 0279 - A NR\_newRAT-Core

R2-2002655 38306\_CRyyyy\_(REL-15)\_Correct on XDD FRX difference OPPO CR Rel-15 38.306 15.9.0 0270 - F NR\_newRAT-Core

R2-2003750 Discussion on XDD-FRX differentiation in UE capability ZTE Corporation, Sanechips discussion Rel-15 NR\_newRAT-Core R2-2000246

R2-2003751 CR to 38.306 on XDD-FRX differentiation in UE capability ZTE Corporation, Sanechips CR Rel-15 38.306 15.9.0 0227 1 F NR\_newRAT-Core R2-2000247

R2-2003752 CR to 38.331 on XDD-FRX differentiation in UE capability ZTE Corporation, Sanechips CR Rel-15 38.331 15.9.0 1436 1 F NR\_newRAT-Core R2-2000248

10 tdocs above not treated

**FR2 Fallback**

**Treated on-line**

R2-2003737 Fallback band combinations Ericsson, AT&T, T-Mobile, Vodafone, Deutsche Telekom, Telecom Italia S.p.A, NTT DOCOMO INC. discussion Rel-15 NR\_newRAT-Core

=> revised in R2-2003832

R2-2003832 Fallback band combinations Ericsson, AT&T, T-Mobile, Vodafone, Deutsche Telekom, Telecom Italia S.p.A, NTT DOCOMO INC. discussion Rel-15 NR\_newRAT-Core

- Ericsson indicate that the annex was changed in the revision.

* noted

R2-2002802 Handling of Fallbacks for Contiguous and Non-contiguous CA in FR2 Apple, Nokia, Nokia Shanghai Bell, Intel, InterDigital, Xiaomi Communications, Spreadtrum Communications, CMCC, Panasonic discussion NR\_Mob\_enh-Core

* noted

DISCUSSION on the two tdocs above

- Nokia think we need to work technically and be careful about an LS.

- LG think we should work on the CRs, and wonder about the timeline for an LS.

- TMO think we don’t know clearly what R4 was asking for, so we should ask what they really intended. TMO think this can be resolved in R4 without R2 CRs. BT think the R4 request was unclear and think we need to ask R4 what they wanted. TEI agrees. Vodafone also agrees and think the LS we worked in last time was a good direction.

- MTK think we should have tech endorsed CRs and can send an LS to R4. Huawei agrees that we should do this. Intel support this way forward. Samsung think this is ok. CMCC support this way forward.

Chair suggestion:

- Chair assumes we will not be able to converge.

- We can reply to R4 LS, and explain the situation in R2.

- We can do some work on the CRs to make them technically ok.

R2-2002803 FR2 CA fallback Apple, Nokia, Nokia Shanghai Bell, Intel, InterDigital, Xiaomi Communications, Spreadtrum Communications, CMCC, Panasonic CR Rel-16 38.331 16.0.0 1523 - F NR\_newRAT-Core

R2-2002804 FR2 CA fallback Apple, Nokia, Nokia Shanghai Bell, Intel, InterDigital, Xiaomi Communications, Spreadtrum Communications, CMCC, Panasonic CR Rel-16 38.306 16.0.0 0274 - F NR\_newRAT-Core

DISCUSSION

- TMO object to have CRs, and think we can send an LS to RP saying it is not feasible.

- LG would like Apple to compromise. Ericsson think Apple are unreasonable. CMCC also would like to send LS and think the LS can be phrased in a neutral way. Samsung agrees. Turkcell agrees.

* Send LS to R4, explaining the situation in R2 (could explain also why we have not been able to converge), ask questions that would/could be relevant to technical solution (MTK).
* Work on CRs to have techncially endorsed CRs to RP, by email to next meeting (assumption is that we can tech endorse CRs also if R4 doesnt reply).
* [AT109bis-e][062][NR15] LS on FR2 Fallbacks (Mediatek)

Scope: Reply LS to R4, explaining the situation in R2 (could explain also why we have not been able to converge), ask questions that would/could be relevant to technical solution

Intended outcome: Approved LS

Deadline: April 28 0700 UTC

[R2-2004267](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004267.zip) Reply LS on Handling of Fallbacks for combined contiguous and non-contiguous CA or DC configurations in FR2 RAN2 LSout

* [062] Approved
* [Post109bis-e][xx][NR15] CRs for FR2 CA Fallback (Apple)

Scope: Based on R2-2002803, R2-2002804, produce CRs that can be technically endorsed.

Intended outcome: Endorsable CRs

Deadline: Next Meeting

**SRS Capability for SRS only SCell**

R2-2003443 [Post109e#25][NR15] SRS Capability report for SRS only Scell summary Huawei, HiSilicon discussion Rel-15 NR\_newRAT-Core

* [063] Noted

R2-2003444 SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1559 - F NR\_newRAT-Core

R2-2004197 SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1559 1 F NR\_newRAT-Core

* [063] Agreed in Principle

R2-2003445 SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1560 - A NR\_newRAT-Core

R2-2004198 SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1560 1 A NR\_newRAT-Core

* [063] Agreed in Principle

[R2-2004199](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004199.zip) SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-15 38.306 15.9.0 0294 - F NR\_newRAT-Core

* [063] Agreed in Principle

[R2-2004200](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004200.zip) SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-16 38.306 16.0.0 0295 - A NR\_newRAT-Core

* [063] Agreed in Principle

R2-2002574 Correction on UE capability signalling for simultaneous SRS antenna and carrier switching Qualcomm Incorporated CR Rel-15 38.306 15.9.0 0265 - F NR\_newRAT-Core

* [063] Postponed
* [AT109bis-e][063][NR15] SRS capability for SRS-only SCell (Huawei)

Scope: Treat R2-2003443, R2-2003444, R2-2003445, R2-2002574

Intended outcome: Agreed-in-principle CRs

Deadline: April 29 0700 UTC

UE cap codebook parameters

* [AT109bis-e][013][NR15] UE Cap Codebook parameters (Nokia, Huawei)

Scope: Treat R2-2002552, R2-2002990, R2-2003456, R2-2003816, R2-2003817, R2-2003457, R2-2003458

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

R2-2004117 [AT109bis-e][013][NR15] UE Cap Codebook parameters (Nokia, Huawei) Huawei, Nokia

* [013] Noted (conclusion are listed under respective doc below)

R2-2002509 Reply LS on default codebook parameters (R1-2001307; contact: Nokia) RAN1 LS in Rel-15 NR\_newRAT-Core To:RAN2

=> Revised in R2-2002552

R2-2002552 Reply LS on default codebook parameters (R1-2001307; contact: Nokia) RAN1 LS in Rel-15 NR\_newRAT-Core To:RAN2

* [013] Noted

R2-2002990 TS 38.306 Clarifying consequences if not supported Nokia, Nokia Shanghai Bell, NTT Docomo Inc. CR Rel-15 38.306 15.9.0 0176 4 F NR\_newRAT-Core R2-2000165

[013]

- Chair (at half-time): It seems there is support to make some clarifications, however each change need to be discussed. More discussion is required.

* [013] Email discussion to next meeting
* [Post109bis-e][NR15] Default values for UE capability (Nokia)

Scope: Continue discussion from AT109bis-e [013], pave the way for agreements.

Intended outcome: Report

Deadline: Next meeting

R2-2003456 Discussion on the capability of Basic CSI feedback (2-32) Huawei, HiSilicon, Orange, Telecom Italia S.p.A., Vodafone, CMCC, China Unicom, China Telecom discussion Rel-15 NR\_newRAT-Core

* [013] Noted

[013]

- Email disc Rapporteur: This discussion gets significant support from companies. The common understanding is that the clarification is needed and correct. It is also from companies’ feedback that report of maxNumberTxPortsPerResource of 8 implies that lower values are also supported for that triplet and the clarification does not preclude lower values. So it is proposed to agree the CRs as they are.

- Chair: it seems NTT Docomo has objections.

[013] after upload of of R2-2004117

- QC want to hold agreement until checking with R1 colleges.

- QC think this is related to under-reporting for CSI-RS, and we might need to await an agreed solution. Huawei think this is R15 so we can agree separately.

[013]

- Email discussions to next meeting proposed.

R2-2003457 CR on the capability of Basic CSI feedback (2-23) Huawei, HiSilicon, Orange, Telecom Italia S.p.A., Vodafone, CMCC, China Unicom, China Telecom CR Rel-15 38.306 15.9.0 0283 - F NR\_newRAT-Core Revised

=> Revised in R2-2003764

R2-2003764 CR on the capability of Basic CSI feedback (2-32) Huawei, HiSilicon, Orange, Telecom Italia S.p.A., Vodafone, CMCC, China Unicom, China Telecom CR Rel-15 38.306 15.9.0 0283 1 F NR\_newRAT-Core R2-2003457 Late

=> Revised in R2-2003816

R2-2003816 CR on the capability of Basic CSI feedback (2-32) Huawei, HiSilicon, Orange, Telecom Italia S.p.A., Vodafone, CMCC, China Unicom, China Telecom, Ericsson CR Rel-15 38.306 15.9.0 0283 2 F NR\_newRAT-Core R2-2003457 Late

R2-2003458 CR on the capability of Basic CSI feedback (2-23) Huawei, HiSilicon, Orange, Telecom Italia S.p.A., Vodafone, CMCC, China Unicom, China Telecom CR Rel-16 38.306 16.0.0 0284 - A NR\_newRAT-Core Revised

=> Revised in R2-2003765

R2-2003765 CR on the capability of Basic CSI feedback (2-32) Huawei, HiSilicon, Orange, Telecom Italia S.p.A., Vodafone, CMCC, China Unicom, China Telecom CR Rel-16 38.306 16.0.0 0284 1 A NR\_newRAT-Core R2-2003458 Late

=> Revised in R2-2003817

R2-2003817 CR on the capability of Basic CSI feedback (2-32) Huawei, HiSilicon, Orange, Telecom Italia S.p.A., Vodafone, CMCC, China Unicom, China Telecom, Ericsson CR Rel-16 38.306 16.0.0 0284 2 A NR\_newRAT-Core R2-2003458 Late

* [013] Email discussion to next meeting
* [Post109bis-e][NR15] clarification on codebook parameters for 2-32 (Huawei)

Scope: Continue discussion from AT109bis-e [013], pave the way for agreements.

Intended outcome: Report

Deadline: Next meeting

UE Cap Miscellaneous I

* [AT109bis-e][014][NR15] UE Cap Miscellaneous I (Qualcomm, ZTE, Mediatek, Huawei)

Scope: Treat R2-2002571, R2-2002572, R2-2002696, R2-2002578, R2-2002679, R2-2002724, R2-2003463, R2-2003464

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

R2-2002571 Corrections on the number of DRBs Qualcomm Incorporated CR Rel-15 38.306 15.9.0 0262 - F NR\_newRAT-Core

R2-2002572 Corrections on the number of DRBs Qualcomm Incorporated CR Rel-15 36.331 15.9.0 4235 - F TEI15

[014]

- Part 1 outcome: There is support to have such changes. However there are comments that may need to be taken into account.

- Chair: Assume we will have this CR

- Rap: after long discussions, need to postpone.

* [014] Postpone both to next meeting

R2-2002696 CR on unnecessary FRx differentiation ZTE Corporation, Sanechips CR Rel-15 38.306 15.9.0 0273 - F NR\_newRAT-Core

[014]

- Proposal to Continue discussion via a post-meeting email discussion until the next meeting.

- Try to come to common understanding on the meaning of“FDD-TDD DIFF”and“FR1-FR2 DIFF”columns for“per frequency band”capabilities in TS38.306.

- Prepare an agreeable CR, if any change to the specification is deemed necessary.

* Email discussion to next meeting
* [Post109bis-e][NR15] unnecessary FRx differentiation (ZTE)

Scope: Continue discussion of R2-2002696. Try to come to common understanding on the meaning of “FDD-TDD DIFF” and “FR1-FR2 DIFF” columns for “per frequency band” capabilities in TS38.306.

Intended outcome: Report, Agreeable CR, if any change to the specification is deemed necessary

Deadline: Next Meeting

R2-2002578 Signalling of NR-DC only band combination Qualcomm Incorporated discussion Rel-15 NR\_newRAT-Core

[014]

- Rap Proposal: No conclusion in this meeting. Allow more time for companies (especially infra-vendors) to check if the suggested approach causes any inter-operability issue. The document can be resubmitted in the next meeting to reconfirm.

* [014] postponed

R2-2002579 Clarification on supported NR-DC cell grouping Qualcomm Incorporated CR Rel-15 38.306 15.9.0 0264 - F NR\_newRAT-Core

[014]

- Rap: There is support. Proceed to part 2. Review CRs updated based on the comments received in part 1. In the meanwhile, the companies are also encouraged to check whether it is already clear in the specifications of other WGs.

- Chair: Assume we will have this CR

* [014] revised

R2-2002724 Correction to need code for capabilityRequestFilterCommon MediaTek Inc. CR Rel-15 38.331 15.9.0 1519 - F NR\_newRAT-Core

[014]

- Rap: Propose not pursed in this meeting.

- Rap: There was consensus on the behaviour so such clarification can be captured in chair notes.

* [014] RAN2 understand that when capabilityRequestFilterCommon is absent, the UE applies the behaviour on absence for the child fields
* [014] Not Pursued

R2-2003463 Correction to RequestedCapabilityCommon Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1561 - F NR\_newRAT-Core

* [014] in-principle agreed

R2-2003464 Correction to RequestedCapabilityCommon Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1562 - A NR\_newRAT-Core

* [014] in-principle agreed

UE Cap Miscellaneous II

* [AT109bis-e][015][NR15] UE Cap Miscellaneous II (Qualcomm, ZTE, Mediatek, Huawei)

Scope: Treat R2-2003306, R2-2003307, R2-2003280, R2-2003281, R2-2003459, R2-2003460, R2-2003461, R2-2003462

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

R2-2003306 Undefined band combinations in UECapabilityInformation Ericsson discussion Rel-15 NR\_newRAT-Core

* [015] RAN2 understanding : The UE should not report a superset band combination not supported or not defined in RAN4 only for the purpose to reduce the fallback band combination report, where the consequence is that the network will ignore the superset band combination and its fallback band combinations (no specification change pursued).

R2-2003307 Bands in supportedBandListNR Ericsson discussion Rel-15 NR\_newRAT-Core

* [015] RAN2 confirm that the UE that indicates support for certain band (including SUL) in supportedBandCombinationList (in RF-Parameters or RF-ParametersMRDC) also indicates this band in supportedBandListNR. (no specification change pursued)

R2-2003280 Missing "Optional features without UE radio access capability parameters" Ericsson CR Rel-15 38.306 15.9.0 0280 - F NR\_newRAT-Core

R2-2003281 Missing "Optional features without UE radio access capability parameters" Ericsson CR Rel-16 38.306 16.0.0 0281 - A NR\_newRAT-Core

[015]

- Rap Proposal: Agree on the CRs as they are.

- NTT docomo suggest to add a note on regional regulatory requirement.

- Rap: It is also rapporteur’s understanding that the support for PWS is mandatory in some regions. But it can also be dependent on the type of device, e.g. is PWS needed for a device without any man-machine interface? The requirement as already stated in LTE specification is working without causing any problem, so it is probably wise to stick to it and avoid getting into the discussion on regulatory requirements.

* [015] both agreed in-principle

R2-2003459 Correction on default Power class for FR2 Huawei, HiSilicon CR Rel-15 38.306 15.9.0 0285 - F NR\_newRAT-Core

R2-2003460 Correction on default Power class for FR2 Huawei, HiSilicon CR Rel-16 38.306 16.0.0 0286 - A NR\_newRAT-Core

* [015] both CRs are not pursued.

R2-2003461 Correction to the serving cell number for ENDC power class Huawei, HiSilicon CR Rel-15 38.306 15.9.0 0287 - F NR\_newRAT-Core

R2-2003462 Correction to the serving cell number for ENDC power class Huawei, HiSilicon CR Rel-16 38.306 16.0.0 0288 - A NR\_newRAT-Core

[015]

- Rap proposal: CRs are not pursued in this meeting.

- Rap: Allow companies more time to check. See comment [Huawei2], pointing to Table 6.2B.1.3-1: “Maximum output power for inter-band EN-DC (two bands)” in 38.101-3. LS from RAN4 is of course welcome.

* [015] postponed

UE Cap Miscellaneous III

* [AT109bis-e][016][NR15] UE Cap Miscellaneous III (Oppo, ZTE, Nokia, Huawei)

Scope: Treat R2-2002694, R2-2002695, R2-2002637, R2-2002636, R2-2002989, R2-2002678, R2-2003541, R2-2003542

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

R2-2002694 Clarification on BandParameters of BandCombination ZTE Corporation, Sanechips, OPPO discussion Rel-15 NR\_newRAT-Core

[016]

- Rapporteur’s suggestion: RAN2 confirm option-1 in R2-2002694 (i.e., The UE shall include the same number of entries, and listed in the same order, as in *bandList* (without suffix)) as the correct understanding. The CR is not pursued in this meeting. The proponent can continue discussion with interested companies.

- Chair: Several companies think this is obvious and need no clarification. However this has been clarified for similar cases.

* [016] R2 confirms that for bandList-v1540 The UE shall include the same number of entries, and listed in the same order, as in *bandList* (without suffix).
* [016] R2 confirms that for bandList-v16xy The UE shall include the same number of entries, and listed in the same order, as in *bandList* (without suffix).

R2-2002695 Corrections on BandParameters of BandCombination ZTE Corporation, Sanechips, OPPO CR Rel-15 38.331 15.9.0 1517 - F NR\_newRAT-Core

* [016] Postponed

R2-2002637 Correction of Band Parameter (v1600) OPPO, ZTE Corporation, Sanechips CR Rel-16 38.331 16.0.0 1512 - F NR\_newRAT-Core

* [016] Postponed

R2-2002636 Correction of Band Parameter (v1540) OPPO, ZTE Corporation, Sanechips CR Rel-16 38.331 16.0.0 1511 - A NR\_newRAT-Core

* [016] Postponed

R2-2002989 TS 38.331 Dummifying bandwidth class F Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.9.0 0257 1 F NR\_newRAT-Core R2-2002059

[016]

- Rap: suggest agree as-is.

- Lenovo comments that there are several other code points that are not used for FR1, why don’t then specify also those, and we should not do this.

- A cpl of companies are ok but see no usefulness.

- Chair: can agree if proponents can convince Lenovo.

* [016] No Reply, not pursued

R2-2002678 Corrections on bwp-WithoutRestriction OPPO CR Rel-15 38.306 15.9.0 0271 - F NR\_newRAT-Core

[016]

- Rap: suggest agree and merge with rapporteur CR.

- Chair: two companies express that we should not do this, several others that this is just editorial.

* [016] not Pursued

R2-2003541 Correction on bwp-SwitchingDelay Huawei, HiSilicon CR Rel-15 38.306 15.9.0 0291 - F NR\_newRAT-Core

R2-2003542 Correction on bwp-SwitchingDelay Huawei, HiSilicon CR Rel-16 38.306 16.0.0 0292 - A NR\_newRAT-Core

[016]

- Chair: some opposition

* [016] Not Pursued
* [016] RAN2 confirms that the UE is only mandated to report *bwp-SwitchingDelay* if the UE supports DCI and timer-based active BWP switch (no TS impact)

Not Available

R2-2003308 Email discussion report: Post109e#24][NR15] Clarification of capabilities with NR-DC and NE-DC Ericsson discussion Rel-15 NR\_newRAT-Core Late

**Withdrawn**

R2-2002635 Correction of Band Parameter (v1540) OPPO, ZTE Corporation, Sanechips CR Rel-15 38.331 15.9.0 1510 - F NR\_newRAT-Core Withdrawn

### 5.4.4 Idle/inactive mode procedures

This agenda item addresses the idle and inactive behaviour specified in 38.304 or 36.304. Other aspects related to inactive (e.g. state transitions, out of coverage, etc) are covered under RRC agenda items (5.4.1.x)

* [AT109bis-e][017][NR15] Cell Barred (Huawei)

Scope: Treat R2-2003339, R2-2003773

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 23 0700 UTC

Part 2: For the parts that are agreeable, discussion will continue to agree on CRs.

CLOSED (Part 2 not needed)

R2-2003339 Corrections to cell barred handling Huawei, HiSilicon CR Rel-15 38.304 15.6.0 0154 - F NR\_newRAT-Core

R2-2003340 Corrections to cell barred handling Huawei, HiSilicon CR Rel-16 38.304 16.0.0 0155 - A NR\_newRAT-Core

=> Revised in R2-2003773

R2-2003773 Corrections to cell barred handling Huawei, HiSilicon CR Rel-16 38.304 16.0.0 0155 1 A NR\_newRAT-Core

[017]

- From company comments, there seems to be varying levels of interpretation/understanding on the current procedure text and the proposed changes, for both those supporting and not supporting the changes.

- Rap: Given that there is currently not a consensus, but there is a level of support it is proposed to postpone the CR to the next meeting to give companies a chance to check their technical understanding.

- Chair: Ok we can postpone for time to digest.

* [017] CRs postponed

## 5.5 Void

# 6 Rel-16 NR Work Items

## 6.0 Rel-16 General

### 6.0.1 RRC ASN.1 review

Including outcome of the email discussion [Post109e#51][ASN.1] RRC ASN.1 review NR (Ericsson)

* [NR Rel-16] 38331 ASN1 \* (Ericsson)

Scope: ASN.1 review email discussions for management of RIL issues and the ASN.1 review file span multiple meetings.

See also ftp.3gpp.org/Email\_Discussions/RAN2/[Misc]/ASN1 review/Rel-16 2020-06\* (where \* may be e.g. Phase1).

Deadlines and planning: Communicated in the email discussion.

Flagging of RIL Issues, Comments on Rapporteur proposals is also done in this email discussion.

RIL Issues Email Discussions

DISCUSSION

- 13 groups -> 13 email discussions (13 groups already in the RILs, named “DiscMailX”, X = 0..12).

- Email discussions can be extended.

- End Goal is to agree a solution for each RIL issue (class 2 issues). Rapporteur responsibility to produce and maintain the solution.

- Samsung wonder if this is class 2 or 3 issues. Ericsson think this is now for class 2 issues.

- Vivo wonder how the grouping is done, Ericsson explains that for the moment it is per IE or cpl of IEs.

* [AT109bis-e][065][NR RIL] DiscMail1 (Ericsson)
* [AT109bis-e][066][NR RIL] DiscMail2 (Huawei)
* [AT109bis-e][067][NR RIL] DiscMail3 (ZTE)
* [AT109bis-e][068][NR RIL] DiscMail4 (Huawei)
* [AT109bis-e][069][NR RIL] DiscMail5 + DiscMail6 (ZTE)
* [AT109bis-e][070][NR RIL] DiscMail7 + DiscMail9 (vivo)
* [AT109bis-e][071][NR RIL] DiscMail10 (Leonovo)
* [AT109bis-e][072][NR RIL] DiscMail11 + DiscMail12 (Ericsson)

Scope: Discussion and implementation of review issues.

Wanted outcome: a) Agreed RIL Status update in the email discussion report b) Agreed ASN.1/procedure text proposal included in the email discussion report.  
After email discussion report is agreed, the TPs will be included in the ASN.1 Review file, for the continued ASN.1 review.

Deadline: Email discussion Stop at EOM, April 30 (short extension 1 week could be considered if needed).

RRC CR handling after R2 109bis-e

- During this meeting for most WIs, the corrections are put in WI specific CRs (this is a result of this meeting).

- For a WI, there will be a Cat B functional CR (for most WIs), introducing missing functionality, maybe we keep it “minimal”. Could also contain corrections, see further below.

- Alt A. For a WI, after this meeting, all RRC corrections are merged into the ASN1 Mega-CR, and at next meeting all corrections are done in the context of updating the ASN.1 Mega-CR.

- Alt B. For WI, after this meeting, all RRC corrections are kept separate in a WI specific CR.

- For the continued ASN.1 review:

- If most WIs can follow Alt A, we just continue the ASN.1 review based on the ASN.1 Mega-CR, or:

- We could create a temporary RRC version, merging all CRs, as a base for further review, i.e. asa a base for issues finding and issues discussion. The actual CRs need to be based on March version.

DISCSUSSION

- Samsung think we need a temp RRC in any case. Intel agrees we need the temp RRC. ZTE agrees. Nokia agrees.

- Lenovo think we could apply Alt A and alt B different for differnet WIs. Huawei agrees that this can be different dep on the WI.

- Ericsson wonders if we can have everything in the mega CR.

- Nokia think we just have a CR per WI, and we do the merge after the meeting. LG agrees.

- Chair think that if we don’t merge most things to ASN.1 CR, after this meeting we will need to maintain both ASN.1 CR and Temp RRC version.

- Huawei think that an issue is that the time is short.

- Samsung think we need to think a bit more.

* Continue discussion offline

R2-2004235 RRC CR Handling R2 Chairman

DISCUSSION

- Huawei wonder where to put class 0/1 issues. Chair think there is little risk of collisions, so we can go either way.

- QC wonder about the timeline. Chair think this need to be captured soon. Risk that we need to finish the CRs from this meeting quite quickly

- Samsung think that when an issue is addressed it can be determined where to implement it, in the procedure of hadling RIL issues.

- ZTE wonder why we can’t have RIL handling that is WI specific. Intel thikn we could have RIL commetns in the WI specific CRs.

- Intel think that new additions (Draft CRs), can be based on the current Draft CRs as baseline. QC think changes on changes is difficult, and CRs shold be done by rapporteurs. Oppo think companies need a way to express their views.

- Intel think that common items can go into WI specific CR or go into Rapprteur Common CR.

- Chair wonder if the question is whether we can have issues for processing that do not follow the ASN.1 review process.

- NR RRC rapporteur think we can skip the RIL step completely.

- Samsung think we have used the RILs to keep track and where to allocate certain issues.

- Oppo think that common issues should be discussed in common session and be fixed by rapporteur CR.

- Ericsson wonder what should happen if a clearly WI-specific issue is found.

- QC think we still need RIL, but if something is clearly WI specific it can go to WI CRs without ASN.1 review handling. Huawei think we should have clear guidence for each WI whether issues use the ASN1 review handlign or not.

- TMO has concerns that the process will result in bad quality.

- ZTE think that issues need to be handled case by case. Issues that are clearly WI specific issues can maybe go outside ASN.1 review process, but in case of doubt RILs should be created.

- Intel think RILs can be maintaind for every change, even though it is WI specific. This was done for LTE in R15. LG agrees, and think that RIL bookkeeping can increase efficiency, and think right before next meeting, WI RRC rapporteurs can help decide where to treat each issue.

- QC thikn that WI specific changes, functional changes etc are not covered by RILs.

- Intel think that the tmp RRC anyway contain all changes (including R2 109bis-e) but not after, also WI specific changes, so all following changes could be reflected as RILs regardless if WI specific or not. Nokia agrees that we should have RILs as bookkeeping for all RRC changes.

- CATT think we either have everything in a MEGA CR or everything in WI specific CRs.

- vivo would also like to have the RIL tracking for all issues, and think companies can suggest whether this is a common or WI specific issue. QC thikn this is just extra work.

- Samsung think that the microsteps of the procedure can be described by the RRC rapporteurs in an update of the ASN.1 procedures

- CATT wonder if all changed as this meetings need to be covered by RILs. QC think no.

* We use the Approach B, with WI specific CRs, on a high level as described above
* For the next round of review and WI CR updates (on the new baseline) for disucssion in R2-110-e, we do RIL bookkeeping for all RRC changes (initiated by proponent).
* Proponent should suggest whether a RI belongs to a WI, which one or whether it is common.
* RRC rap’s work on update of the details, and the detailed time plan.
* WI RRC CRs need to finished at latest Thursday next week (last WI, would be good to heave as early deadlines as possible for WIs dep on maturity, to be able to start merge).

ASN.1 review file and RIL list

R2-2003309 TS 38.331 Rel-16 ASN.1 review file, phase 1 Ericsson draftCR Rel-16 38.331 16.0.0 F TEI16 Late

R2-2003310 RIL list TS 38.331 Rel-16 ASN.1 review file, phase 1 Ericsson discussion Rel-15 TEI16 Late

RIs, Monday

\* I630, I631, I632, I634

\* H005

\* H002

\* E032

\*\* S051

All of above treated based on submitted tdocs see below

H001

Huawei indicate that this issue is just about excessive use of the word “info”. Nokia think there is already a guideline saying this shall not be used.

* Agreed (for all instances)

S655

Maybe Requires more thinking. Possibly it is best to use the same structure. Ericsson wonder why size zero is possible. Huawei think size zero could be a way to release, and think we should look for similar cases. MTK agrees size zero is exactly for that.

Samsung wonder if we’d have an email discussion for general things. Intel think the Rapporteur can coordinate. Nokia think we can split the work per “principle”

* Keep open, look for similar cases, see if we can find a similar way for all cases.

S352

Intel think the new ext parameter has somewhat different meaning and this is the reason. Intel think it works same as a critical extension, i.e. a replacement. Nokia agrees, and think the “Ext” is misleading. Huawei think we should have a different name altoghether. Samsung thought it is just a replacement and same name to use.

Docomo wonder what is the problem with noncritical extension. MTK think this could be complex. Nokia think there may be impact to R1 TS. Huawei think we should not duplicate values.

* We consider to Remove Ext (at least)

H200

* The aspect mentioned could be made even clearer than current

I627

Intel clarifies that there was no proposal bec there could be several ways to release. Nokia agrees.

* Treat this together with S655

E133

* Agreed

E134

Lenovo think we should avoid using extension markers in child IEs, and we should check. Nokia agrees that SIBs requires more attention. Huawei wonders if we then extend by parallel list. Ericsson think yes. Samsung agrees.

* Agreed

RIs, Wednesday

\*H003

Treated based on tdoc see below.

G001 – Issue seems correct, treat offline

Nokia think this is a pattern seen in many places.

E039

ZTE agree with the intention and think there should be an independent section. Ericsson think this can be looks further at off-line. Nokia agrees and think we also need to check how this relaed to cond HO. Vivo agrees.

General

R2-2003325 [I630, I631, I632, I633] General discussion on Rel-16 ASN.1 related issues Intel Corporation discussion Rel-16 Late

Discussion

- Nokia wonder if we can document these guidelines so we don’t need to repeat.

- Samsung think that when switching between versions of IEs (critical extensions) we will need to do that by full config.

P7

- Vivo wonder why and wonder about the DL.

- Intel think that the network always know the UE release so for the DL spares could be used.

- Docomo think we had lot of problems with spare values.

P8

- Lenovo wonder if we really need this.

- Intel agrees that it is not mandatory

- Nokia wonder if we use the same for multiple segments of can they be different. Samsung also wonder.

- Chair: no support now

* ASN.1 should support the signalling to release all Rel-16 fields without having to use Full Config.
* Consider grouping fields related to a feature and introduce setupRelease structure to allow the network to release the fields, where other release mechanism are not available (e.g., fields that use Need M).
* Avoid Need R in an extension if other means to release the field (such as setupRelease discussed in proposal #2) is possible. There are scenarios where Need R is useful and hence this requires careful evaluation on a case by case basis
* Use of Need S to configure a specific value when the field is absent should be minimised. There are scenarios where Need S is useful and hence this requires careful evaluation on a case by case basis.
* Introduce Need code where relevant when a field is marked as “absent” in a conditional presence.
* Avoid spare values in ENUMERATED UL fields

R2-2003628 [H005] Discussion on delta signaling without AddModList Huawei, HiSilicon discussion Rel-16 Late

DISCUSSION

- Ericsson and Intel thin indeed M shold be avoided for elements in list.

* Follow the R15 principle that we will avoid using Need M within lists without an AddMod structure.

R2-2003629 [H002] Discussion on the use of SEQUENCE of SEQUENCE and CHOICE Huawei, HiSilicon discussion Rel-16 Late

- MTK think Sequence of Choice is ok, and sequence of sequence is not used. Nokia think the S of S shall indeed be avoided.

- Nokia think we need to check the TS first before we decide to change. We used Seq of Choice in system information and it works. Ericsson agrees.

* Confirm seq of seq shall not be used but there is none in RRC, so no action needed.

IE merge / reuse

R2-2003412 [S051] Correction to NR-U and IIoT merger for harq-ProcID-offset Ericsson CR Rel-16 38.321 16.0.0 0727 - F NR\_unlic-Core, NR\_IIOT

R2-2003413 [S051] Correction to NR-U and IIoT merger for harq-ProcID-offset Ericsson CR Rel-16 38.331 16.0.0 1558 - F NR\_unlic-Core, NR\_IIOT

DISCUSSION

- QC think this is also discussed in NR-U session.

- Ericsson clarifies that the proposal is that NR-U submits CRs to correct

- Samsung at least think there is a need to clarify things, even if we heep the two different IEs.

* There is support to go in this direction, details need to be looked at.

R2-2003626 [H003] Discussion on time domain resource allocation in multiple R16 topics Huawei, HiSilicon discussion Rel-16 Late

- Nokia think that for DL we need to do non-crit extension, and possibly also for UL. Huawei think that then we need to continue extending same way. Nokia indicate these are in SIBs

- Ericsson think that “new” is not good in names, and think we need to include the people working with the affected WIs.

- Huawei can attempt to change into merge but with non-critical extensions.

- Ericsson think these cannot be merged, as the features are different on L1 level, and we need to understand how/if we can configure these together, or not.

* Send a LS to R1 asking for clarification what is intended to be possible to be configured together (can consider other cases) (Huawei).
* [AT109bis-e][061][NR16] LS on Conflicting configurations (Huawei)

Scope: Based on R2-2003626 and discussion, make an LS to R1 asking about intentions whether potentially conflicting/potentially similar features can be or are intended to be configured together.

Intended outcome: Approved LS

Deadline: April 29

* [Post109bis-e][NR16] LS on Conflicting configurations (Huawei)

Scope: Based on R2-2003626 and discussion, make an LS to R1 asking about intentions whether potentially conflicting/potentially similar features can be or are intended to be configured together. Continuation of [061]

Intended outcome: Approved LS

Deadline: short/med

SON/MDT/DCCA

R2-2003788 [E032] Correction to UE response procedure for idle measurements Ericsson draftCR Rel-16 38.331 16.0.0 LTE\_NR\_DC\_CA\_enh-Core, NR\_SON\_MDT-Core Late

- Huawei thnk the network will not ask logged MDT log at the same time, so SRB2 should be ok. Intel agrees, and think this solution requires response both for SRB1 and SRB2. ZTE agrees

- MTK also think this is not neccsary. Samsung agrees, Nokia agrees too. LG too

- ZTE and Nokia think we could capture a note so network avoids this. LG think this is not need. Samsung also think a note is not needed.

- Chair: not much support.

* Not agreed

Cross WI DCCA Mobility

R2-2003201 [E038] Triggering of fast MCG recovery upon T312 expiry Ericsson draftCR Rel-16 38.331 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core, NR\_Mob\_enh-Core Late

SON MDT

R2-2003078 [E008] On adding LBTFailure as RLF cause Ericsson draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core, NR\_unlic-Core

R2-2003079 [E008] On adding LBTFailure as SCG Failure cause Ericsson draftCR Rel-16 36.331 16.0.0 F NR\_SON\_MDT-Core, NR\_unlic-Core

R2-2003094 [E051] On excluding the 2 step RA related RAReport Ericsson draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core, NR\_2step\_RACH-Core

R2-2003583 [H016][H019][MDTSON] Discussion on the meaning of reportInterval for UL delay measurements Huawei, HiSilicon discussion Rel-16 NR\_SON\_MDT-Core

R2-2003584 [H017][MDTSON] Discussion on the field CGI-InfoEUTRALogging Huawei, HiSilicon discussion Rel-16 NR\_SON\_MDT-Core

R2-2003585 [H018][MDTSON] Discussion on PLMN id in the UE variable on CEF report Huawei, HiSilicon discussion Rel-16 NR\_SON\_MDT-Core

Power saving

R2-2003230 ASN.1/ general protocol issues on UE power saving (S406, S407, S408) Samsung Telecommunications discussion Rel-16

IIOT

R2-2003311 [H155] Change the type of reference time from integer to bitstring Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_IIOT-Core

URLLC

Can be found under AI 6.21

2 Step

R2-2003630 [H072] DraftCR for the overall organization of signalling for 2stepRACH Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_2step\_RACH-Core Late

R2-2003631 [H076-079] DraftCR for RACH-ConfigCommonTwoStepRA Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_2step\_RACH-Core Late

Positioning

R2-2003632 [H062][H065] DraftCR for slotOffset for aperiodic SRS Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core Late

R2-2003633 [H063][H066][H070][H071] DraftCR for the configuration of spatial relation for SRS with SSB Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core Late

On-demand SI in Connected

R2-2003634 [H207][H208][H209][H211][H218] DraftCR for on-demand SI request for positioning in RRC\_CONNECTED Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core Late

R2-2003635 [H221] DraftCR for DedicatedSIB-Request Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core Late

R2-2003636 [H215][H216][H217][H219] DraftCR for Actions upon reception of the SIB1 Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core Late

R2-2003637 [H222] DraftCR for on-demand SI request for positioning in RRC\_CONNECTED Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core Late

NR-U

R2-2003638 [H226] TP for the search space group switching for CSS Huawei, HiSilicon discussion Rel-16 Late

R2-2003639 [H227] TP for the decription for CG configuration Huawei, HiSilicon discussion Rel-16 Late

DCCA

R2-2003654 [M105][DCCA][MDT] Discussion on MeasResult2EUTRA MediaTek Inc. draftCR Rel-16 38.331 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core, NR\_SON\_MDT-Core Late

Not avilable

R2-2003820 General ASN.1 issues for 36.331 Rel-16 (S007) Samsung R&D Institute UK discussion Rel-16 Late

R2-2003627 [H004] Discuission on the ASN.1 of inter-dependent field values Huawei, HiSilicon discussion Rel-16 Late

R2-2003714 [H230 ] Extension of a single Need M item to a list of this item Huawei, HiSilicon discussion Rel-16 NR\_eMIMO-Core Late

R2-2003715 [H231] Extending the number of entries of a list not using ToAddMod list Huawei, HiSilicon discussion Rel-16 NR\_eMIMO-Core Late

R2-2003716 [H232] Extension to the contents of items of a list using ToAddMostList in absence of extension markers Huawei, HiSilicon discussion Rel-16 NR\_eMIMO-Core Late

R2-2003717 [H233] Moving parameters used by RRCConnectionReconfiguration and RRCConnectionResume to IEs Huawei, HiSilicon discussion Rel-16 NR\_eMIMO-Core Late

Withdrawn

R2-2003388 ASN.1/ general protocol issues on UE power saving (S406, S407, S408) Samsung Telecommunications discussion Rel-16 Late Withdrawn

### 6.0.2 Feature List and UE capabilities

Coordination by Intel.

R2-2004202 Rel-16 UE capability Handling Discussion Intel

DISCUSSION P2, 3, 4

- ZTE wonders how to proceed.

- Intel think R1 will deliver at this meeting and we could start processing by email discussion. R4 may not deliver until next meeting.

- ZTE wonder who when we do the implementation, Intel and Docomo volunteers to do CRs provided to next meeting. What will be discussed in the email discussion?

- Huawei indeed think we need some email processing. Huawei wonder if R1 and R4 will update feature list after May. Chair proposes to assess maturity in May.

- Samsung think it would be very good if the CR can be available before next meeting.

- Docomo agrees and this should be done as early as possible, and think R2 need to interpret the output from R1.

- Intel think we can start email discussion immediately when R1 output is available. Intel wonder about LTE. R1 and R4 will deliver results also for LTE. Huawei thikn that for R15 the LTE part was done per WI, and the impact for LTE is expected a lot less.

- MTK agrees this should start asap. MTK have some concern on P3 and P4. MTK think this was mainly for mandatory wo capability. Is it worth it? And is it urgent? Huawei shares these views. Ericsson too, see no need to update.

- CATT think we should have email discussion for each WI. Especially for V2X there could be big impact, and CRs per WI may make sense. Huawei agrees that V2X could be separate.

- Ericsson are ok with email discussion plan. Ericsson are not sure V2X is completely separate and think we can start common discussions, and possibly decide CR separation later.

- vivo agrees to start early on Draft CRs, and think merged CR is good to give the full picture.

- Docomo think that at least for 331 we should have a merged CR, V2X has introduced errors before. Samsung think the actual implementation is not the issue with UE caps so one CR could be good. Intel agrees. Intel thikn V2X capabilities can be considered separate in any case, and think the TR update is not urgent

- ZTE think the different approach for R2 and R1/R4 capabilities may cause complexity. Docomo think that at next meeting we need to coordinate. Apple thikn we should have a email discussion for R2 UE feature list

- LG support the mega CR approach.

- Oppo think mega CR may be ok, but also think V2X is separate, and think V2X will be a separate email discussion. CATT agrees.

- Ericsson appreciates the initiative by Intel and Docomo. MTK too, and MTK support to have a mega CR.

- Oppo wonder about the timing, shall we start with R2 feature list. Intel think that one option is that R2 capabilities are combined into the mega CRs once the R2 parts are agreeable.

- CATT want separate email discussion for V2X.

- MTK indicate that there will be a pos email discussion on UE cap. MTK wonder whether the outcome for positioning will be included in the mega CRs. Intel thikn this means that we don’t need a separate positioning email discussion.

- Oppo wonder if R2 will do the excersize to do feature groups.

- Samsung understand that for the email discussion we focus on L1 list, For R2 capabilties the WI CRs are merged in mega CR once stable. Is this the common understanding? Huawei want to ask the same questions but have the same understanding as Samsung? Samsung thikn that WI CR rapporteur can take initiative.

- Ericsson wonder if we shold have the same approach as for NR for LTE. Huawei think WI rapporteurs can do this for LTE. LTE has less WIs than NR.

- Nokia and Ericsson think that for the LTE/NR joint items we may need to treat joint. Docomo think that work can be separate in any way, but for capabilities for MR-DC architectures we may need to coordinate.

**For L1/Radio/Pos capabilities:**

* Intel/Docomo are tasked to do first draft of CRs (38331, 38306, 37355) including all WI (decide at next meeting if some WIs shall be separated out).
* We have an email discussion, start when we get info from R1, include the Draft CRs when available
* Updates to 38.822 (or other TR) will have low priority at R2-110-e (can deicde later if up update this TR at all).
* TBD to what extent we need coordination NR/LTE due to MR-DC capabilities.

For R2 capabilities:

* TBD when R2 capabilities are combined into the mega capability CRs once the R2 parts are stable (initiative by WI CR rapporteur - to judge stability and when this is done).

**For LTE:**

* Rapporteurs can address this in the regular sessions, and we can have WI specific CRs as for R15.

R2-2003373 UE capabilities for RAN1 feature list Intel Corporation, NTT DOCOMO, INC. draftCR Rel-16 38.331 16.0.0 B NR\_UE\_pow\_sav, NR\_IAB-Core, NR\_eMIMO-Core, NR\_IIOT-Core, NR\_2step\_RACH-Core, 5G\_V2X\_NRSL-Core, NR\_Mob\_enh-Core, NR\_pos-Core, NR\_unlic-Core, LTE\_NR\_DC\_CA\_enh-Core, NR\_SON\_MDT-Core, NR\_CLI\_RIM, NG\_RAN\_PRN-Core, TEI16, NR\_L1enh\_URLLC-Core

R2-2003374 UE capabilities for RAN1 feature list Intel Corporation, NTT DOCOMO, INC. draftCR Rel-16 38.306 16.0.0 B NR\_UE\_pow\_sav, NR\_IAB-Core, NR\_eMIMO-Core, NR\_IIOT-Core, NR\_2step\_RACH-Core, 5G\_V2X\_NRSL-Core, NR\_Mob\_enh-Core, NR\_pos-Core, NR\_unlic-Core, LTE\_NR\_DC\_CA\_enh-Core, NR\_SON\_MDT-Core, NR\_CLI\_RIM, NG\_RAN\_PRN-Core, TEI16, NR\_L1enh\_URLLC-Core

R2-2003375 Update for Rel-16 UE capabilities Intel Corporation, NTT DOCOMO, INC. draftCR Rel-16 38.822 15.0.1 B NR\_UE\_pow\_sav, NR\_IAB-Core, NR\_eMIMO-Core, NR\_IIOT-Core, NR\_2step\_RACH-Core, 5G\_V2X\_NRSL-Core, NR\_Mob\_enh-Core, NR\_pos-Core, NR\_unlic-Core, LTE\_NR\_DC\_CA\_enh-Core, NR\_SON\_MDT-Core, NR\_CLI\_RIM, NG\_RAN\_PRN-Core, TEI16, NR\_L1enh\_URLLC-Core

R2-2003447 Discussion on the way of capturing Rel-16 UE capabilities Huawei, HiSilicon discussion Rel-16 NR\_newRAT-Core

### 6.0.3 Other

Other Cross WI issues, e.g. MAC issues.

38.300

R2-2002512 LS on RAN1 input to Rel-16 TS 38.300 on V2X, Positioning and MR-DC (R1-2001356; contact: Nokia) RAN1 LS in Rel-16 5G\_V2X\_NRSL, NR\_pos-Core, LTE\_NR\_DC\_CA\_enh-Core To:RAN2

Chair: Suggest to not treat, postpone.

38.321

R2-2003024 Usage of eLCID field MediaTek Inc. discussion Rel-16

Moved here from 6.2.x:

* [060] Addition of wording “or the type of the corresponding MAC CE ” is agreed. All other proposals are not agreed.

R2-2002931 Stopping ongoing Random Access procedure LG Electronics Inc. discussion Rel-16 NR\_unlic-Core

[060]

- Chair: On the second proposal from LG it is quite clear that this is a text enhancement and there are some companies objecting, so I would suggest we don’t do it. Text enhancements for MAC, also very good ones, has always been very controversial.

* [060] Proposals are not agreed
* [AT109bis-e][060][NR16] MAC eLCID and RACH stopping (LG, Mediatek)

Scope: treat R2-2003024 and R2-2002931

Wanted outcome: if agreement can be reached, one or two in-principle-agreed CRs.

## 6.1 Integrated Access and Backhaul for NR

(NR\_IAB-Core; leading WG: RAN2; REL-16; started: Dec 18; target; June 20; WID: RP-200084, SR: RP-200083)

Time budget: 3 TU

Tdoc Limitation: 8 tdocs

### 6.1.1 Organisational

Including incoming LSs, draft TS, rapporteur inputs

R2-2002727 IAB workplan update Qualcomm Incorporated (Rapporteur) Work Plan Rel-16 R2-2000480

* Noted

R2-2004169 Reply LS on T\_delta in IAB R1 LSin

- ZTE explain that we don’t need to change our TS, except a reference update (MAC).

* Noted, take into account for MAC CR.

OFFLINE, EMAIL DISCUSSIONS AFTER R2-109-bis-e,

- Rapporteur: CRs 38304/306, 37340, 38300 can send updates to next meeting if there is anything to be captured. We don’t need email discussions for this.

* [Post109bis-e][] IAB RRC 1 (Ericsson)

Part 1 Scope: CR update after R2-109bis-e capturing meeting agreements (if needed)

Intended outcome: Endorsed RRC CR (input to Tmp RRC), Deadline: RRC Short 1

Part 2 Scope: LS to RAN3/SA2/CT1 informing them that IAB-MT does not support UAC (1 week),

Intended outcome: Approved LSout, Deadline: Short

* [Post109bis-e][] IAB RRC 2 (Ericsson)

Scope: Open issues including Solutions (including ASN.1 RIL handling)

The open issues presently include: Impact from agreements by RAN3#107e-bis: IP signaling, others. See Rap summary of RAN3 agreements. Barring of intraFreqReselection field description in MIB for IAB-MT. Proposal 5 of UP offline at 109bis-e, Corrections/clarifications, e.g., on defaultUL-BH-RLC-Channel-r16, bh-RLC-ChannelToReleaseList-r16 pointed out by Nok (Dawid) etc

Intended outcome: Agreeable CR updates, Report.

Deadline : Next meeting (+ follow ASN.1 review deadlines).

* [Post109bis-e][] IAB BAP (Huawei)

Scope: Update running CR with latest RAN3 agreement on bearer mapping, DL mapping, UL mapping. Including discussion on terminology/notation on the various identifiers to sync up between RAN2 and RAN3 TSs. Review for issue identification and corrections.

Intended outcome: Agreeable CR update, Report.

Deadline : Next meeting.

* [Post109bis-e][] IAB UE Cap (Nokia)

Scope: Characterization of minimum set of mandatory Rel-15 UE features for wide-range MT, discuss need for signalling options.

Intended outcome: Report.

Deadline : Next meeting.

* [Post109bis-e][] IAB NPN ()

Scope: Conclude the NPN discussion with agreed TS impact?, Includes LS to RAN3/SA2/CT1 to inform them what RAN2 will support for IAB

Intended outcome: Report? Approved LS out.

Deadline: Short

* [Post109bis-e][] IAB MAC (Samsung)

Scope: Address anything open and corrections for IAB.

Intended outcome: Agreeable CR update

Deadline: Next meeting

### 6.1.2 Stage-2 Corrections

CRs if needed 38300 36300 (QC), 37340 (Huawei)

* [AT109bis-e][018][IAB] Stage-2 (Qualcomm, Huawei)

Scope: Treat Stage-2: Issues, corrections and CRs (add CRs to x.300 if needed).

Specifically: R2-2003014, R2-2002728, R2-2003178

Part 1: Treat meeting input and comments.

Deadline: April 24 0700 UTC

Part 2: Update of CRs, e.g. to include agreements this meeting

* [018] The following IAB terminology is adopted:

**- There is no IAB-donor gNB or IAB-donor-gNB.**

**- IAB-donor-DU and IAB-donor-CU are hyphenated in the same manner as the gNB-CU and gNB-DU.**

**- The IAB-node holds gNB-DU functionality with IAB-specific enhancements, referred to as *IAB-DU*.**

**- There is no *IAB-node-DU*.**

**- The IAB-DU of a specific IAB-node, e.g., IAB-node 1, can be referred to as IAB-node-1’s IAB-DU, or IAB-DU 1.**

**- The IAB-node holds UE functionality with IAB-specific enhancements, referred to as *IAB-MT*.**

**- There is no *IAB-node-MT*.**

**- The IAB-MT of a specific IAB-node, e.g., IAB-node 1, can be referred to as IAB-node-1’s IAB-MT, or IAB-MT 1.**

**- The parent-node IAB-DU and child-node IAB-MT may be referred to as parent IAB-DU and child IAB-MT, respectively.**

**- Hyphenation follows commonly known rules**

R2-2003014 Miscellaneous correction to 37.340 for IAB Huawei, HiSilicon CR Rel-16 37.340 16.1.0 0192 - F NR\_IAB-Core

R2-2004151 Miscellaneous correction to 37.340 for IAB Huawei, HiSilicon CR Rel-16 37.340 16.1.0 0192 1 F NR\_IAB-Core

* [018] Endorsed

R2-2002728 Notation of IAB terminology Qualcomm Incorporated (Rapporteur) discussion Rel-16

* [018] Noted

R2-2003178 F1AP over LTE leg signalling correction to 37.340 Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IAB-Core

* [018] Noted

Further enhancements – Not treated

R2-2003300 On Multi-connectivity for IAB Ericsson discussion Rel-16 NR\_IAB-Core

### 6.1.3 BAP Open Issues and Corrections

Open issue: Configuration of DL mapping at IAB-donor DU (dependent on RAN3 work). Corrections to BAP: Routing, Bearer Mapping, BAP based Flow Control, Other

BAP CR and summary if needed by Huawei

* [AT109bis-e][019][IAB] BAP (Huawei)

Scope: Treat BAP issues corrections and CR.

Part 1: R2-2003011 (and other non-controversial corrections if any), R2-2003561 P1 and P2

Part 2: Potential additions after on-line session, or other forgotten things (TBD)

Deadline: April 23 0700 UTC

Part 3: Update of CR, e.g. to include all agreements this meeting

R2-2004152 Summary of email discussion [AT109bis-e][019][IAB] BAP Huawei, HiSilicon

Agreements Email [019]

* CU can remove F1 interface to IAB-DU without releasing IAB-MT, in orderly release case.
* CU should remove F1 interface to IAB-DU first, if IAB-MT is to be released, in orderly release case.
* BAP at IAB-DU will be released by implementation, if IAB-MT is released due to RLF, in disorderly release case.
* R2 will NOT specify delay timer for event triggered BAP flow control in R16.

Summary

R2-2003561 Summary of 6.1.3 for BAP open issues and corrections Huawei, HiSilicon discussion Rel-16 NR\_IAB-Core Late

Discussion proposals treated on-line, the rest by email.

DISCUSSION

P3

- QC think we already concluded we leave this to implementation.

- ZTE think we didn’t agree to leave to impl. ZTE think option 1 is preferable, e.g. for GBR.

- Samsung think option 2 is simpler. Intel also think we have assumed/agreed Option 2. LG think that if default channel is used it need to support all QoS channels, so option 2 is for sure simpler.

- Ericsson want to keep both option 1 and 2. Samsung wonder how this would work. Ericsson think they wuld not be used at the same time. Ericsson are not completely sure, and if option 1 is similar to P2 then agree with Samsung.

- QC think option 2 is more general.

- Chair proposes to agree option 2. Huawei think option 1 can still be discussed. IAB-MT doesn’t know the QoS.

- Nokia think indeed we can just agree option 2 as we also have P1 and P2.

* The Donor CU can configure the 1:1 or N:1 mapping to BH RLC Channel on the backup egress link of IAB-node before BH RLF. Whether it is configured is up to CU implementation.
* If the regular mapping to BH RLC Channel in the backup egress link is configured by donor CU, IAB node follows the configured BH RLC channel mapping for re-routed packets.
* If the regular mapping to BH RLC Channel in the backup egress link is NOT configured by donor CU, IAB node: uses any BH RLC channel on the backup egress link for re-routed packets by implementation.

CR

R2-2003011 Miscellaneous corrections to 38.340 for IAB Huawei, HiSilicon CR Rel-16 38.340 16.0.0 0001 - F NR\_IAB-Core

R2-2004153 Miscellaneous corrections to 38.340 for IAB Huawei, HiSilicon CR Rel-16 38.340 16.0.0 0001 1 F NR\_IAB-Core

* [019] Endorsed

Covered by Summary

R2-2002851 Further consideration on bearer mapping ZTE, Sanechips discussion

R2-2002889 Remaining issues of DL HbH FC vivo discussion

R2-2003002 TP on clarifying a condition and aligning a terminology in BAP specification LG Electronics Inc. discussion Rel-16 NR\_IAB-Core

R2-2003015 The bearer mapping configuration on the backup link in RLF Huawei, HiSilicon discussion Rel-16 NR\_IAB-Core

R2-2003176 Corrections to BAP Nokia, Nokia Shanghai Bell draftCR Rel-16 38.340 16.0.0 NR\_IAB-Core

R2-2003438 On Release of BAP Entities CATT discussion Rel-16 NR\_IAB-Core

### 6.1.4 User plane Open Issues and Corrections

Open Issue: Clarification of the implication of the MAC-CE to signal number of guard symbols. Corrections to User plane not covered by BAP

MAC CR and summary if needed by Samsung

* [AT109bis-e][020][IAB] User Plane (Samsung)

Scope: Treat UP issues corrections and CR.

Part 1: R2-2002691 (and other non-controversial corrections if any)

Part 2: Potential additions after on-line session (TBD)

Deadline first round: April 23 0700 UTC

Part 3: Update of CR

R2-2002716 Summary of IAB User Plane open issues and corrections Samsung Electronics GmbH report Late

R2-2003829 Summary of IAB User Plane open issues and corrections Samsung Electronics GmbH report Late

DISCUSSION

P2

- LG would like to use the reserved bits for LCID range.

- Nokia would like that as well, and think that the reserved bits are not used.

- Samsung think that 14bits are acc to R3. QC think R3 re-discusses, and thikn that we discussed recently 20 bit flow label, and we should have 16 bits. Nokia think it is in any case better to have reserved values rather than reserved bits. ZTE also support 16bits.

- Chair wonder if it matters whether 14-16bits. Samsung think from use case prespective it doesn’t matter.

- Ericsson think we can align w R3, we should respect R3 decision.

- Huawei thikn we should stick to previous agreement.

- QC indicates that R3 decision was based on a mistake by the WI rapporteur.

- CHAIR: OK, we wait for R3 to rediscuss then, if there was no reason to change the earlier decided 16bits should be applied. Come bck later.

P3

- Samsung point out that we anyway have a common SR section and the SR section need to refer to pre-emptive BSR,

- Ericsson agrees.

- LG think the current TS is ok, and there is no problem. Vivo also think currently there is no problem and we can fix in the future if there are problems.

- Huawei think we should have a separate section. The main problem is that pre-emtive BSR is a regular BSR, and maintenance of regular BSR is the issue. Intel agrees as well.

- Chair think that the rapporteur can decide. Samsung think it might be easier with a separate section.

P4

- Huawei think we don’t need to send an LS as R1 already stated this is per Cell. Intel think we should follow R1 per cell agreement, ZTE agrees and think different TAG can have different situation and different config.

- QC thikn CG is ok, and think we can decide and inform. Vivo agrees. LG agrees, and thikn the propagation is the same. Samsung think we can agree. Nokia think that per-cell doesn’t even work.

- KDDI are ok to send LS to R1.

- Chair propose that we can assume per-cell and ask R1 if the assumption per-cell-group would be ok/better

P5

- LG thikn this procedure have almost no contents and we don’t need a separate section.

- QC think the new section just refer to R1.

P7

- Samsung thikn that sending and cancellation should be specified, and we can leave triggering to impl. LG agrees. Intel think that if we specify sending we should specify cancellation. Huawei thikn we can specify some cancellation conditions but additional cancellation can be applied. Futurewei agrees and think that implementation need flexibility.

- Vivo think we indeed need to specify.

- Chair think we should discuss offline.

P8

- Samsung indicate that everyone was ok with this, but should be in the discussion with P7.

P9

- Chair/QC wonder why we need to discuss this. Chair thikn this is a capability discussion. Huawei agrees this does not need to be discussed. LG has doubts on DRB. Ericsson thikn PDCP will not be used for DRB. Nokia agrees this do not need to be discussed.

- Chair: it seems there is no particular requirements for duplication etc, but there seems to be no reason to functionally prevent this, so this is a capability discussion. No need to decide here .

P10

- LG are ok with this proposal but think this should be in RRC not MAC.

- QC agrees this can be discussed in the context of RRC, suggest this to be part of RRC email discussion.

- Huawei think first two issues are MAC and the last one is RRC.

- Perspecta labs think this indeed impact both MAC and RRC.

- KDDI wonder what is the use case for MSG1 based Si request as IAB MT is always in Connected mode. Do we need to address this use case? Huawei think if we agree this, we don’t need to dicuss in general the SI request for IAB MT. QC think that the reason for a new RACH for Idle mode is that IAB modes may have different coverage char than normal UEs and may be in areas where there is no normal coverage. This was discussed in R1.

* P8/P7 continue offline
* All of the MAC CEs introduced by the IAB WI shall have their identifiers selected from set2 of the one-byte eLCID space.
* Pre-emptive BSR procedure to be captured as a standalone Section (separate from Section 5.4.5 on “legacy” BSR).
* RAN2 to leave the decision on whether the information contained in the Guard Symbol MAC CE applies to the entire cell group, or individual cell on which it is received, to RAN1. RAN2 to send an appropriate LS to RAN1
* RAN2 to introduce a short section on procedural aspects for Timing offset adjustment for IAB.
* Skip P9, this could possibly be a capablity discussion, no need to change other TS for this,
* the IAB specific IAB RACH configuration is used by IAB MT, if configured (exceptions can be discussed), further details to be discussed offline.

R2-2004128 Remaining issues from IAB User Plane Samsung

DISCUSSION

P5

- Samsung proposed to continue P5 offline.

- QC think this is not requied for coverage but there are some enhancements. QC think it is not a showstopper.

- FW think that the IAB specific IEs can already be configured, acc to the RRC CR.

- Chair think that indeed we can continue on P5, but we move it to the RRC discussion.

* Apart from the already agreed cancellation condition (that Pre-emptive BSR shall be cancelled when a MAC PDU that contains the pre-emptive BSR MAC CE is sent), RAN2 will not standardize any additional Pre-emptive BSR cancellation conditions in Rel-16.
* Implementation-specific cancellation conditions for Pre-emptive BSR are not precluded.
* SR triggered by (the impossibility to send) Pre-emptive BSR shall be cancelled if a MAC PDU containing the relevant Pre-emptive BSR MAC CE is sent.

R2-2004127 LS to RAN1 on Guard Symbols in IAB RAN2 LSout

* [020] Approved

*moved from 6.2.*

R2-2002691 CR (IAB MAC - rapporteur corrections and clarifications) Samsung Electronics GmbH CR Rel-16 38.321 16.0.0 0708 - F NR\_IAB-Core

R2-2003830 CR (IAB MAC - rapporteur corrections and clarifications) Samsung Electronics GmbH CR Rel-16 38.321 16.0.0 0708 1 F NR\_IAB-Core

* Endorsed (baseline for further updates)

R2-2004126 CR (IAB MAC - rapporteur corrections and clarifications) Samsung Electronics GmbH CR Rel-16 38.321 16.0.0 0708 2 F NR\_IAB-Core

* [020] Endorsed (baseline for further updates)

Covered by Summary

*moved from 6.2.*

R2-2002690 Finalising Rel-16 MAC design (IAB-related open issues) Samsung Electronics GmbH report

R2-2002715 Introducing a section for handling of Tdelta MAC CE Samsung Electronics GmbH CR Rel-16 38.321 16.0.0 0709 - F NR\_IAB-Core

R2-2002679 On interpretation and use of the Guard Symbols MAC CE Samsung Electronics GmbH discussion

R2-2002680 Open issues with IAB LCID space extension Samsung Electronics GmbH discussion

R2-2002852 Discussion on IAB User plane aspects ZTE, Sanechips discussion

R2-2002890 Renamed to be: remaining issues of preemtpive BSR vivo discussion

R2-2002999 Determining a cell to apply a Guard Symbols MAC CE LG Electronics Inc. discussion Rel-16 NR\_IAB-Core

R2-2003000 Consideration on LCID set for IAB MAC CE and reserved LCID values LG Electronics Inc. discussion Rel-16 NR\_IAB-Core

R2-2003001 TP for remaining issues on Guard Symbols MAC CE and LCID extension LG Electronics Inc. discussion Rel-16 NR\_IAB-Core

R2-2003016 Remaining issues of Guard Symbols MAC CE Huawei, HiSilicon discussion Rel-16 NR\_IAB-Core

R2-2003017 Clarification on the RACH configuration used in MAC procedure for IAB Huawei, HiSilicon discussion Rel-16 NR\_IAB-Core

R2-2003018 Clarification of BSR and Pre-emptive BSR Huawei, HiSilicon discussion Rel-16 NR\_IAB-Core

R2-2003019 Discussion on the SR cancelation for pre-BSR and LCID values for IAB Huawei, HiSilicon discussion Rel-16 NR\_IAB-Core

R2-2003048 Cell information in Guard symbols MAC CE Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IAB-Core

R2-2003049 Handling of IAB specific MAC CEs Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IAB-Core

R2-2003359 Change LCID to eLCID for IAB MAC CEs Ericsson CR Rel-16 38.321 16.0.0 0724 - F NR\_IAB-Core

R2-2003644 Issue of SR triggered by Pre-emptive BSR ASUSTeK discussion Rel-16 38.321 NR\_IAB-Core

R2-2003720 Remaining issues for IAB MAC Futurewei discussion

R2-2003098 PDCP duplication in IAB DC Lenovo, Motorola Mobility discussion Rel-16

### 6.1.5 RRC Open Issues and corrections

Including outcome of the email discussion [Post109e#35][IAB] RRC Open Issues (Ericsson),

On Open issues, only the email discussion is planned to be treated. Open Issues: Establishment of F1-C-over-LTE/X2AP path, Behaviour of IAB-node when going to NR RRC\_IDLE, Reestablishment at former descendant nodes (SA only).

Issues coord, Draft CRs by Ericsson

* [AT109bis-e][021][IAB] RRC (Ericsson)

Scope: Treat RRC issues corrections and CRs (except UE cap, which is treated separately)

Part 1: Non-Controversial parts of R2-2003297 (easy agreements), R2-2003298, R2-2003299 (and other non-controversial corrections if any), first round of discussion on R2-2003020

Part 2: Potential additions after on-line session (TBD)

Deadline first round: April 23 0700 UTC

Part 3: Update of CRs

R2-2004125 Correction for TS 38.331 Related to IAB WI Ericsson CR Rel-16 38.331 16.0.0 1554 1 F NR\_IAB-Core Late

DISCUSSION

- Ericsson explains that this CR implements easy agreements, except the BH-RLC-ChannelID-r16 coding, that seems to need some discussions.

- Huawei think that LCH and BH RLC channel doesn’t need to be the same. Nokia think this issue is addressed.

- Nokia don’t understand the clarification from Ericsson to motivate the choice. Nokia think there is no good motive for a choice. Huawei agrees Samsung too.

- ZTE has raised some comments, and the naming in BH-RLC-Channel ID FD is wrong.

- CATT make a small comment about Inactive state, and due to new agreement, we might need to clarify things about Inactive e.g. whether BAP entity should be release. Ericsson agrees, now we have agreed that it is optional. Huawei agrees too.

- Chair: Choice can be discussed further, Field decription need update.

* Endorsed as baseline for further work (with comments above).

R2-2003298 Correction for TS 38.331 Related to IAB WI Ericsson CR Rel-16 38.331 16.0.0 1554 - F NR\_IAB-Core Late

R2-2003299 Correction for TS 36.331 Related to IAB WI Ericsson CR Rel-16 36.331 16.0.0 4255 - F NR\_IAB-Core Late

R2-2003297 Report on email discussion [Post109e][035][IAB] RRC open issues Ericsson discussion Rel-16 NR\_IAB-Core

DISCUSSION

- Ericsson indicate that P9 need to be dicussed.

P9

- Huawei wonder how this would work, but are ok. R3 has the same discussions, wonder whether R3 or R2 shall address.

- QC suggest to wait until R3 are done.

- Nokia think path selection might need some specification.

- Samsung in principle support btu want to wait.

- Chair: We wait for R3 discussion outcome.

P2

- QC wonder if we need this. For EN-DC we always use NR cell

- Huawei think that for NR-DC we may need something, but no restriction,

- Nokia are ok with the proposal. LG as well.

P6

- QC thikn this comes from R1 we don’t need an LS. Ericsson agrees. During discussion there were some other views expressed.

- Chair: it seems we don’t send an LS

P7

- QC think we juat wait and see what R3 comes up with.

* A clarification to be made in the field description of the default BH RLC channel IE in BAP configuration, indicating that, for the case that IAB-MT is in DC mode: If the IAB-MT is operating in (NG)EN-DC, the default BH RLC channel is referring to an RLC channel on the SCG; Otherwise, it is referring to an RLC channel on the MCG.

R2-2002600 Considerations on BAP entity release KDDI Corporation discussion

R2-2002853 Remaining issues for F1-C over LTE ZTE, Sanechips discussion

R2-2002854 Misellaneous RRC issues for IAB ZTE, Sanechips discussion

R2-2003021 Draft LS to RAN1 on IAB L1 parameters Huawei, HiSilicon LS out Rel-16 NR\_IAB-Core To:RAN1

R2-2003301 Allowing an IAB configuration without DRB Ericsson discussion Rel-16 NR\_IAB-Core

R2-2003726 SCGFailureInformation procedure in IAB RLF handling Samsung R&D Institute UK discussion

R2-2003596 No need to support RRC\_INACTIVE for IAB-MT LG Electronics France discussion NR\_IAB-Core

R2-2003598 On RRC connection without DRB LG Electronics France discussion NR\_IAB-Core

ASN.1 issues and RRC Corrections

R2-2003728 [S020],[S021] SMTC occasion calculation for smtc3 for IAB-MT Samsung R&D Institute UK discussion

R2-2003742 [S020] Conditional presence on smtc3 in IAB Samsung R&D Institute UK CR Rel-16 38.331 16.0.0 1582 - F NR\_IAB\_enh-Core

- Samsung indicate no need to discuss further

R2-2003743 [S021] Clarification on smtc3 operation in IAB Samsung R&D Institute UK CR Rel-16 38.331 16.0.0 1583 - F NR\_IAB\_enh-Core

- Ericsson indicate that this was already included.

R2-2003020 ASN.1 issues related to L1 parameters for IAB Huawei, HiSilicon discussion Rel-16 NR\_IAB-Core

- Huawei indicate that this contents has been included in the RRC CR.

* Noted

### 6.1.6 RLF Handling Open Issues

Including outcome of the email discussion [Post109e#36][IAB] RLF Handling Open Issues (Qualcomm)

Open Issues: Behaviour of SA IAB-DU after BH RLF has been declared and RLF notification has been sent, RLF notification for IAB-node in ENDC. Note only the email discussion document is planned to be treated for this AI.

This AI is expected to be treated by email only.

* [AT109bis-e][022][IAB] RLF Handling (Qualcomm)

Scope: Treat RLF handling to close open issues and make correction if applicable, R2-2003813, and R2-2003726

Expected outcome: Decisions taken in this email discussion shall be taken into account in the other email discussions on CRs: RRC, possibly BAP, Possibly Idle Mode TS.

Deadline: April 24 0700 UTC

CLOSED

[022]

- Chair: it seems the two proposals from the incoming email discussion are the agreeable ones. Note that the offline report contains a lot more variants with some support. However at this late stage it was not possible to agree to introduce the functions, as companies thought significant discussions are needed to iron out the details.

* [022] IAB-DU behavior after RLF declaration is left up to implementation. IAB-DU should be able to send RLF notification when RLF recovery fails.
* [022] Fast MCG link recovery is supported for NRDC and ENDC.

R2-2002729 Report email discussion [Post109e#36][IAB] RLF Handling Open Issues Qualcomm Incorporated report Rel-16

=> Revised in R2-2003775

R2-2003775 Report email discussion [Post109e#36][IAB] RLF Handling Open Issues Qualcomm Incorporated report Rel-16

=> Revised in R2-2003813

R2-2003813 Report email discussion [Post109e#36][IAB] RLF Handling Open Issues Qualcomm Incorporated report Rel-16

Other

R2-2002855 Discussion on IAB BH RLF handling ZTE, Sanechips discussion

R2-2002991 Discussion on IAB BH RLF handling NEC discussion

R2-2003099 Fast MCG link recovery for IAB DC case Lenovo, Motorola Mobility discussion Rel-16

R2-2003236 Remaining details for Backhaul RLF Handling Futurewei discussion

R2-2003302 Further details on Backhaul link RLF Notification Types to Downstream Node(s) Ericsson discussion Rel-16 NR\_IAB-Core

R2-2003304 Backhaul RLC Channel Remapping for IAB node(s) Ericsson discussion Rel-16 NR\_IAB-Core

R2-2003314 Possible issues on Backhaul RLF handling Kyocera discussion

### 6.1.7 IP address allocation Open Issues

Including outcome of the email discussion [Post109e#26][IAB] IP address allocation (Samsung). Please take into account also incoming LS in R3-201420. Note only the email discussion document is planned to be treated for this AI.

* [AT109bis-e][023][IAB] IP address allocation (Samsung)

Scope: Treat IP address allocation to close open issues and make correction if applicable, R2-2002522, R2-2002523 and R2-2002672

Expected outcome: Decisions taken in this email discussion shall be taken into account in the other email discussions on CRs: RRC.

Deadline: April 24 0700 UTC

CLOSED

R2-2004142 Way forward on IP address allocation for IAB nodes Samsung

- Chair: this is the outcome of [023]

* [023] noted

[023]

- Chair : Opposing companies agreed in the end to follow the majority and there could be the following agreements.

ONLINE

- Nokia want to discuss if the UE assistance information message could be used instead of a new message.

- FW agrees with Nokia, but wonders if this is for 38331 or also 36331. Huawei think it impact only NR (also for ENDC).

- FW thikn this is only supported for SRB1 (but could be made applicable to SRB3). Nokia think that UL MRDC infomation transfer should be used for LTE.

- huawei wonder whether both SRB1 and SRB3 need to be supported. Nokia think at least SRB1 but would be ok with SRB3 as well.

- Chair: the following was initially agreed in [023]: A new message is defined for IP address request, for both SA and NSA cases. [This overrides the previous SA agreement, which stated that RRCSetupComplete message is used by the IAB node to request IP address for the case of node integration in the SA scenario.]

- Chair: Online the UE assistance information message was brought on the table. Can continue discuss this.

* [023] An IAB node explicitly requests IP address(es) during integration in the NSA case. [Explicit means here that either an existing message (e.g. RRCReconfigurationComplete) is modified to explicitly include a request, or a new message is introduced to indicate a request.]
* [023] A single RRC message/procedure is adopted for IP address request, for both SA and NSA cases.
* [023] For the IP address configuration by the CU, RRCReconfiguration message is used for both SA and NSA cases.
* Continue in the RRC discussion.

LS in

R2-2002522 LS on the inter donor DU re-routing and source IP configuration (R3-201418; contact: Huawei)) RAN3 LS in Rel-16 NR\_IAB-Core To:RAN2

R2-2002523 LS on IP address management in IAB network (R3-201420; contact: Samsung) RAN3 LS in Rel-16 NR\_IAB-Core To:RAN2

Email Discussion

R2-2002672 Report on email discussion [Post109e\_26 IAB IP address allocation (Samsung) Samsung Electronics GmbH report

Other

R2-2002856 Remaining issues of IP address allocation ZTE, Sanechips discussion

R2-2003180 IP address request in NSA and SA Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IAB-Core

R2-2003303 IP Address Assignment for IAB Node(s) Ericsson discussion Rel-16 NR\_IAB-Core

R2-2003525 IP address allocation for IAB-nodes Futurewei discussion

Moved from 6.1.3:

R2-2003725 IP address assignment for IAB node DU on failure handling Samsung R&D Institute UK discussion

### 6.1.8 UE capabilities

Optionality of Rel-15 UE Features for IAB-MT: From RP 87e: RAN WGs to investigate which of the mandatory Rel-15 UE features (as defined in TR 38.822) can be optional for basic operation of [the IAB-MT] (and if found useful, for different classes of IAB-MTs as defined by RAN4). RAN WGs should strive to minimize specification impact.

Summary by Nokia

R2-2003794 Summary of 6.1.8 UE capabilities for IAB-MT Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IAB-Core

DISCUSSION

P4

- Samsung wonder if mandatory wo capability will be changed to optional. We assume there will be no change in signalling. LG agrees it should be kept same.

- Nokia think P4 is not controversial.

- Nokia think there are no requirements for new signalling, but we might need to discuss for some cases.

- Huawei think the guidance from RP is that we shall discussion mandatory wo capability and some will be changed to optional. Ericsson Agrees.

P4

- QC think we should decide on DRB as well. Nokia indicate that DRB is discussed in the RRC email discussion. Nokia think we can discuss now.

- Ericsson think DRB support is optional as it is only for O&M. Vivo agrees, and IAB can work without DRB.

- LG think DRB support is needed, and see no big reason to have this optional. Samsung agrees and think we need new signalling if we make it optional. We sholdn’t spend time on this. Nokia agrees with Samsung and LG, and think there is no harm, and think we don’t need to make this change to not support DRB. Nokia think we can limit the number of DRBs, e.g. to 1. ZTE agrees that DRB should be supported. Apple and Intel agrees. Can keep TS simple. Sony agrees there can be significant spec change to remove support for DRB.

- Huawei support P4 but think DRB don’t really need to be supported. It can be optional, but could also be ok with compromise to just support one DRB. CATT have same view as Huawei.

- Chair wonder if we can then make DRB support mandatory and support one.

- Ericsson think the change to remove support for DRB is very simple, the CR is already available. LG think there may be impact to other working groups, e.g. SA2.

- Samsung are open to discuss Nokias compromise, not clear if the number is one. Vivo prefers optional but can consider to discuss

- Ericsson think we should look at IAB as a blank sheet, and we are now discussing which features to add, what would DRB be used for. Nokia think O&M, and think DRB would be the mainstream way. Nokia think also we need capability signalling change.

- Ericsson think we should define a minimal set, and nothing more, and there is no need for a DRB. Intel wonder what is saved.

- Chair observation: Most (almost all) companies think DRB can be useful and the effort to make it optional is not worthwhile. Can however not agree now due to objections.

P5

- LG don’t agree, think this signalling is just IODT bits, think that for IAB they can still be IODT bits but set at different time-line. Nokia wonder if RP really shold discuss setting such bits for IAB. Nokia think they should just be optional.

- Huawei think IAB node capability can use other signalling. Huawei anyway agrees to this.

- Samsung have concerns that IAB nodes may have bad performance, and think we need to look at each feature independently, e.g. PCell on FR2 should be mandatory for IAB (is optional for UE). Intel think that optional doesn’t mean that it is not supported.

- QC think we need to specify minimum features to connect to the network. Nokia think those are covered by P4.

- Samsung cannot agree, and think the situation is similar to P4 where one company objected.

P6

- Samsung wonder if this requires new signalling or not. Nokia think it might require new signalling. Huawei think this is the same as legacy UE, so no new signalling is needed. Nokia think this is currently mandatory wo capability signalling.

- Huawei and CATT think we just ensure that EN-DC is optional, and we don’t need to discuss this detail.

- Chair: not so many opinions, confusion, seems we cannot agree this now.

- Nokia clarifies that this relates to DRB.

General

- QC think we need to understand the fundamental criteria. QC think everything should be optional for IAB as a starting assumption. Nokia think companies have different opinions. Ericsson would be fine with making everything optional. Nokia would also be ok, in particular for wide area IAB MT, which are more like network equipment.

- QC think we should first focus on wide area.

- Samsung think on minimum functionality – companies have differnet opnions, and think signalling impact is important, and think many companies believe no signalling impact. Samsung think a suitable first min set is all capabilities that are mandatory wo capability signalling.

- Huawei think we don’t need to make all features that are mandatory wo capability signalling mandatory. Huawei think we need to discuss the signalling. Huawei think we don’t need any signalling at all for IAB, at least for Wide Area scenario. This would be based on negotiation, e.g. a network node could configure what are the capabilities of neighbour nodes.

- QC agrees that this need to be sorted out, we might not have any signalling impact.

- Ericsson think a wide area MT should be the focus. Ericsson wonder what would be the assumption for other MTs (R4 has not specified yet). Nokia think wide area deployment is strictly coordinated, and local are may be more ad-hoc.

- QC think R4 is discussing what is local area MT. QC think we should consider a smallest possible min set of features for wide area MT, and can consider a somewhat larger minimum set for local area MTs.

- Samsung wonder if we need two minimum sets. Tmob think that we would just go with a minimm set.

- intel think R4 hasn’t defined local area MT yet.

- Samsung think we need to agree on signalling first in order to discuss.

- Ericsson think we can assume that everything is optional and not use UE capability signalling. Huawei agrees.

- CATT think that other groups are assuming that we use UE type signalling.

P7

- Nokia clarifies that this is related to on-demand SI

* All optional features remain optional for IAB-MTs.
* Clarification: EN-DC mode support is not mandatory for IAB-MT.
* The following features are optional for IAB-MT:

**1. PDCP; 1-5: Short SN**

**3. MAC; 3-3: DRX**

**4. Measurements; 4-5: ANR**

**6. Inactive; 6-1: RRC Inactive**

* The following features are mandatory for IAB-MT:

**1. PDPC; 1-0 Basic PDCP procedures, at least for SRB, FFS for DRB related components**

**2. RLC; 2-0 Basic RLC procedures, 2-4 NR RLC SN size for SRB**

**3. MAC; 3-0 Basic MAC procedures**

* It is FFS if in general mandatory features with capability signaling are optional for IAB-MT.
* It is FFS if UE capability signalling will be used at all for Wide Area MTs.
* We consider a min set of features for wide area MT, and whether there may be a need for more mandatory features local area MT.

Ways forward

- QC think we could progress min set for Wide area MT now. LG think other gropus may need to be involved as well, and would like to keep it open. Ericsson think we can continue discussion but as there is no on-line come-back the discussion could as well. Ericsson think we can progress on R2 features. Huawei agrees, and think we should tell the approach to R1 and R4 and ask them for minimum set. QC think we need to ask. Ericsson think if we canno tagree on criterion for minmum set an LS is difficult. Nokia agrees, and think that specify the minimm set is the task from RP. Nokia think we might need to inform on the signalling.

- Chair think we need to understand the signalling aspect. Samsung think we need to discuss more until we send an LS.

* Email discussion to next meeting, charcterization of minimum set + signalling options (Nokia)

Covered by Summary

R2-2002717 Optional Rel-15 UE Features for IAB-MTs AT&T discussion Rel-16 Late

R2-2002730 Optionality of mandatory Rel-15 features for IAB-MT Qualcomm Incorporated discussion Rel-16

R2-2002857 Rel-15 mandatory UE features for Rel-16 IAB-MT ZTE, Sanechips discussion

R2-2002858 Discussion on channel bandwidth for Rel-16 IAB-MT ZTE, Sanechips discussion

R2-2002891 IAB-MT Capability of Rel-15 features vivo discussion

R2-2003022 Capturing IAB capability Huawei, HiSilicon discussion Rel-16 NR\_IAB-Core

R2-2003177 IAB-MT features list and capabilities Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IAB-Core

R2-2003323 Mandatory/optional features for IAB-MT Intel Corporation discussion Rel-16 NR\_IAB-Core

R2-2003360 Rel-15 capabilities to be supported by IAB-MT Ericsson discussion Rel-16 NR\_IAB-Core

R2-2003361 Capability signalling for IAB Ericsson discussion Rel-16 NR\_IAB-Core

R2-2003439 Views on IAB MT Capability CATT discussion Rel-16 NR\_IAB-Core

R2-2003597 Capabilities of IAB MTs LG Electronics France discussion NR\_IAB-Core

R2-2003727 Considering the optionality of Rel-15 UE features for IAB-MT use Samsung R&D Institute UK discussion

### 6.1.9 Other Corrections

304 Issues

* [AT109bis-e][024][IAB] 38304 36304 (Huawei)

Scope: Treat 36304 38304: Issues, corrections and CRs

Specifically: R2-2003012, R2-2003013, R2-2003179, R2-2003346

Part 1: Treat meeting input and comments. If more time is needed, e.g. for R2-2003346, gather initial comments and suggest way forward for decisions next meeting.

Deadline: April 24 0700 UTC

Part 2: Update of CRs, e.g. to include agreements this meeting

R2-2004154 Summary of [AT109bis-e][024] 3X.304 CRs and IAB supporting in NPN Huawei, HiSilicon

DISCUSSION

WF1

- CATT wonder if the IAB MT is treated like a UE. CATT are ok to compromize

- Nokia has the preference to separately specify IAB MT behaviour, but think the most important part is the second part. Ericsson also agrees.

WF2

- Huawei think there may be impact, 50/50 support to address this.

- Chair think we might need to consider even if a IAB MT doesn’t support NPN, we might need to discuss what is the behaviour.

* IAB-MT shall exclude the barred cell as a candidate for cell selection/reselection for 300 seconds, as in the current specification.
* IAB-MT ignores intraFreqReselection
* R2 make an attempt to support IAB functionality in non-public network deployments in R16 in R2#109bis and R2#110 meeting. If the agreeable CRs can be achieved before ASN.1 freeze, then it is supported. Otherwise, it is not supported in R16

R2-2003012 Miscellaneous correction to 38.304 for IAB Huawei, HiSilicon CR Rel-16 38.304 16.0.0 0153 - F NR\_IAB\_enh-Core

R2-2004155 Miscellaneous correction to 38.304 for IAB Huawei, HiSilicon CR Rel-16 38.304 16.0.0 0153 1 F NR\_IAB\_enh-Core

- LG wonder whether CR takes IFRI into account. Huawei indicate that the CR is just about UAC.

* Endorsed as baseline

R2-2003013 Miscellaneous correction to 36.304 for IAB Huawei, HiSilicon CR Rel-16 36.304 16.0.0 0786 - F NR\_IAB\_enh-Core

R2-2004156 Miscellaneous correction to 36.304 for IAB Huawei, HiSilicon CR Rel-16 36.304 16.0.0 0786 1 F NR\_IAB\_enh-Core

* Endorsed as baseline

R2-2003179 Cell re-selection handling for IAB-MT Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IAB-Core

* [024] noted

Moved here from 6.1.5:

R2-2003346 IAB support in NPN deployment Kyocera discussion

* [024] noted

Clarifications and further enhancements – not treated

R2-2002664 PWS information handling in IAB Sony discussion Rel-16 NR\_IAB-Core R2-2000824

R2-2002814 Better cell selection for IAB Nodes Apple discussion NR\_IAB-Core

## 6.2 NR-based Access to Unlicensed Spectrum

(NR\_unlic-Core; leading WG: RAN1; REL-16; started: Dec 18; target; June 20; WID: [RP-192](file:///C:\Data\3GPP\Extracts\RP-191575%20Revised%20WID%20NR-U.doc)926; SR; RP-200459, Further prioritization guidance in RP-191581). Documents in this agenda item will be handled in a break out session.

Time budget: 3 TU

Tdoc Limitation: 3

### 6.2.1 General

Including incoming LSs, rapporteur inputs, etc.  
Contributions in this AI are reserved for WI rapporteur inputs and/or spec rapporteur inputs and do not count towards the tdoc limits. All comments related to 38.300, 38.304 should be given to Ozcan, spec rapporteur. Qualcomm will produce a document with the received issues and update the CR directly

Including [Post109e#40][NR-U] UE capabilities (Qualcomm, Vivo)

No contributions are expected for UE capabilities. Please provide your input to the email discussion. Vivo is expected to produce first draft of 38.304

R2-2002506 LS to RAN2 on NR-U related changes for 38.300 running CR (R1-2001300; contact: Qualcomm) RAN1 LS in Rel-16 NR\_unlic-Core To:RAN2

R2-2002513 LS on SSB index and candidate SSB index for NR-U (R1-2001357; contact: Samsung, Charter Communications) RAN1 LS in Rel-16 NR\_unlic-Core To:RAN2, RAN4

R2-2002514 LS on NR-U enhancements to initial access procedures (R1-2001375; contact: Charter Communications) RAN1 LS in Rel-16 NR\_unlic-Core To:RAN2

R2-2002516 Reply LS on consistent Uplink LBT failure detection mechanism (R1-2001397; contact: Nokia) RAN1 LS in Rel-16 NR\_unlic-Core To:RAN2

R2-2002530 LS on UL LBT failure recovery for the target cell (R4-2002282; contact: Ericsson) RAN4 LS in Rel-16 NR\_unlic-Core To:RAN2 Cc:RAN1

R2-2002584 Running CR to 38.306 on Introducing UE Capability for NR Shared Spectrum vivo draftCR Rel-16 38.306 16.0.0 B NR\_unlic-Core

R2-2002586 Running CR to 38.306 on Introducing UE Capability for NR Shared Spectrum vivo CR Rel-16 38.306 16.0.0 0266 - B NR\_unlic-Core Withdrawn

R2-2002844 Report of Post109e#40][NR-U] UE capabilities Qualcomm Incorporated report

R2-2003008 Reply LS on consistent Uplink LBT failure detection mechanism Nokia LS out Rel-16 NR\_unlic-Core To:RAN1 Late

R2-2003409 Corrections of NR-U in 38.321 Ericsson CR Rel-16 38.321 16.0.0 0726 - F NR\_unlic-Core

R2-2003411 Post109e#39 NR-U MAC open issues Ericsson discussion Rel-16 NR\_unlic-Core

### 6.2.2 User plane

*Including [Post109e#39][NR-U] MAC open issues (Ericsson)*

*Contributions related to issues addressed by the email discussions should be avoided and are discouraged for this AI.*

*All identified critical open issues should be provided to the rapporteur via email discussion Post109e#39 and new contributions on those topics are discouraged. Contributions should be reserved for more complicated issued.*

*No individual company CRs should be submitted*

R2-2002582 Clarification on the LBT Failure Indication vivo discussion

R2-2002583 Discussion on the UE Processing Time for Autonomous Retransmission vivo discussion

R2-2002613 Clash between NR-U and IIoT for the configured grant Samsung discussion Rel-16 NR\_unlic-Core

R2-2002614 Prioritization between initial TX and re-TX on CG in NR-U Samsung CR Rel-16 38.321 16.0.0 0706 - F NR\_unlic-Core

R2-2002837 Discussion incoming RAN1 LS on LBT failure indication OPPO discussion Rel-16 NR\_unlic-Core

R2-2002848 Remaining critical issues for LBT failures Qualcomm Incorporated discussion

R2-2003004 Remaining issue on 2-step random access in NR-U Huawei, HiSilicon discussion Rel-16 NR\_unlic-Core

R2-2003005 Discussion on the MAC CE for NR-U Huawei, HiSilicon discussion Rel-16 NR\_unlic-Core

R2-2003006 Discussion on PDCCH group switching for NR-U Huawei, HiSilicon discussion Rel-16 NR\_unlic-Core

R2-2003031 Flushing HARQ buffer of the pending HARQ process in NR-U LG Electronics Polska CR Rel-16 38.321 16.0.0 0717 - F NR\_unlic-Core

R2-2003050 Draft CR on LBT failure handling in MAC Nokia, Nokia Shanghai Bell draftCR Rel-16 38.321 16.0.0 NR\_unlic-Core

R2-2003410 UEs not supporting gap-less msgA transmission Ericsson discussion Rel-16 NR\_unlic-Core, NR\_2step\_RACH-Core

R2-2003498 MsgA PUSCH LBT failure impact CMCC discussion Rel-16

### 6.2.3 Control plane

*Including [Post109e#38][NR-U] RRC open issues (Qualcomm)*

*Contributions related to issues addressed by the email discussions should be avoided and are discouraged for this AI.*

*All identified critical open issues should be provided to the rapporteur via email discussion Post109e#38 and new contributions on those topics are discouraged. Contributions should be reserved for more complicated issued.*

*No individual company CRs should be submitted*

R2-2002615 Applicability of NR-U features to licensed carrier Samsung discussion Rel-16 NR\_unlic-Core R2-2000535

R2-2002719 On Q-values for Measurements in NR-U Mediatek Inc. discussion

R2-2002843 Report of [Post109e#38][NR-U] RRC open issues Qualcomm Incorporated report Late

R2-2002845 E-UTRAN and NR-U interworking Qualcomm Incorporated discussion

R2-2002846 NR-U RRC Open Issues List Qualcomm Incorporated discussion Late

R2-2002847 Miscellaneous corrections for NR-U Qualcomm Incorporated CR Rel-16 38.331 16.0.0 1528 - F NR\_unlic-Core Late

R2-2002910 Description on Short Message in TS38.331 LG Electronics Inc. discussion Rel-16

R2-2002966 Addressing RAN1 and RAN4 questions on LBT failure configuration ZTE Corporation, Sanechips discussion

R2-2002967 Draft-Reply LS on consistent UL LBT failure detection mechanism ZTE Corporation, Sanechips response Late

R2-2002968 Draft-Reply LS on LS on UL LBT failure recovery for the target cell ZTE Corporation, Sanechips response

R2-2003041 Remaining control plane issues Ericsson discussion NR\_unlic-Core R2-2000337

R2-2003407 LS reply to RAN4 on UL LBT failure recovery for the target cell Ericsson LS out Rel-16 NR\_unlic-Core To:RAN4 Cc:None Late

R2-2003408 UL LBT failure recovery for target cell Ericsson discussion Rel-16 NR\_unlic-Core

R2-2003414 Mobility to NR operating with shared spectrum access Qualcomm Incorporated CR Rel-16 36.331 16.0.0 4263 - B NR\_unlic-Core

## 6.4 NR V2X

(5G\_V2X\_NRSL-Core; leading WG: RAN1; REL-16; started: Mar 19; target; June 20; WID: [RP-](file:///C:\Data\3GPP\TSGR\TSGR_84\docs\RP-190984.zip)200129; SR: RP-200431). Documents in this agenda item will be handled in a break out session

Time budget: 3 TU

Tdoc Limitation: Besides 6.4.2.3, 1 tdoc for discussion and if needed 1 tdoc for TP/draft CR in each agenda item. Note we aim to have single big CR due to e-meeting restrictions and the big CR (by CR rapporteur) will include all agreed proposals. Also note more than 1 TP/draft CRs can be submitted if discussion document includes changes cross multiple specifications, e.g. in agenda item 6.4.3.2 if 1 discussion document includes changes of RLC and PDCP specifications, you can submit both RLC TP/draft CR and PDCP TP/draft CR. Note it is not allowed to submit multiple TPs/draft CRs for the same specification, e.g. in agenda item 6.4.3.1, you cannot submit multiple MAC TPs/draft CRs for multiple MAC issues, i.e. 1 TP/draft CR per specification regardless of the number of issues. For simple corrections/clarifications, please coordinate with CR rapporteurs rather than submitting individual contribution.

### 6.4.1 General

Including incoming LSs, rapporteur inputs, etc.

R2-2002507 Reply LS on NR V2X resource pool configuration and selection (R1-2001304; contact: vivo) RAN1 LS in Rel-16 5G\_V2X\_NRSL-Core To:RAN2

R2-2002518 LS on sidelink HARQ (R1-2001426; contact: LGE) RAN1 LS in Rel-16 5G\_V2X\_NRSL-Core To:RAN2

R2-2002541 LS reply to RAN WG2 LS on NR V2X Security issue and PDCP SN size (S3-200478; contact: CATT) SA3 LS in Rel-16 5G\_V2X\_NRSL-Core To:RAN2

R2-2002563 (draft)LS response to SA3 on NR V2X security issue ZTE Corporation, Sanechips LS out 5G\_V2X\_NRSL-Core To:SA3

R2-2002662 Minor Correction in TS38.300 on SL physical layer measurements Nokia, Nokia Shanghai Bell discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003513 [DRAFT] LS response to SA3 on the security related issues for NR SL Huawei, HiSilicon LS out 5G\_V2X\_NRSL To:SA3

R2-2003514 Corrections on V2X functionalities in TS 36.331 Huawei, HiSilicon CR Rel-16 36.331 16.0.0 4270 - F 5G\_V2X\_NRSL Late

R2-2003519 RRC Open Issue List for 5G V2X with NR SL Huawei (Rapporteur) other 5G\_V2X\_NRSL Late

R2-2003559 Miscellaneous corrections to 38.331 for V2X Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1569 - F 5G\_V2X\_NRSL-Core Late

R2-2003672 Draft LS response to RAN1 on sidelink HARQ Huawei, Hisilicon LS out 5G\_V2X\_NRSL-Core To:RAN1

R2-2003818 [DRAFT] LS to RAN1 on configurations of L1 parameters in RRC Huawei, Hisilicon LS out 5G\_V2X\_NRSL-Core To:RAN1 Late

### 6.4.2 Control plane

R2-2002652 38331\_CRyyyy\_(REL-16)\_Correct to fix SIB12 size issue for NR V2X OPPO draftCR Rel-16 38.331 16.0.0 F 5G\_V2X\_NRSL-Core

#### 6.4.2.1 RRC

Including remaining Uu and PC5 RRC issues. Note capability related issues are handled in 6.4.2.2 and class 3 ASN.1 issues are handled in 6.4.2.3. This agenda item will utilize a summary document to facilitate treatment of topics during the e-meeting. Summary document is provided by RRC CR rapporteur (Huawei).

R2-2002564 Discussion on NR V2X remaining RRC issues ZTE Corporation, Sanechips discussion 5G\_V2X\_NRSL-Core

R2-2002567 (draft)CR on TS 38.331 for NR V2X on miscellaneous issues ZTE Corporation, Sanechips draftCR Rel-16 38.331 16.0.0 D 5G\_V2X\_NRSL-Core

R2-2002621 Discussion on RRC open issues [N001,N002,N005] OPPO discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002622 Draft-CR on RRC open issues of 38.331 [N001,N002,N005] OPPO draftCR Rel-16 38.331 16.0.0 B 5G\_V2X\_NRSL-Core

R2-2002651 Open issues on system information OPPO discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002653 36331\_CRyyyy\_(REL-16)\_ Correct on SIB28 message for NR V2X OPPO draftCR Rel-16 36.331 16.0.0 F 5G\_V2X\_NRSL-Core

R2-2002722 Configuration failure handling on PC5 MediaTek Inc. discussion Rel-16

R2-2002807 Remaining issues on PC5-RRC procedures Apple discussion 5G\_V2X\_NRSL-Core

R2-2002821 Triggering condition for sidelink RSRP reporting MediaTek Inc. discussion Rel-16

R2-2002828 Further Discussion on RRC Remaining Issues CATT discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002850 Left issue on RRC for NR V2X LG Electronics France discussion Rel-16 38.331 5G\_V2X\_NRSL-Core

R2-2002918 Summary of [Post109e#54][V2X] RRC Open Issues Huawei (Rapporteur) discussion Late

R2-2002919 Discussion on remaining RRC Open issues for 5G V2X with NR SL Huawei, HiSilicon discussion

R2-2002920 Draft CR to TS 38.331 on the remaining RRC Open issues for 5G V2X with NR SL Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL

R2-2002921 Draft CR to TS 38.321 on the remaining RRC Open issues for 5G V2X with NR SL Huawei, HiSilicon draftCR Rel-16 38.321 16.0.0 5G\_V2X\_NRSL

R2-2003096 RRC remaining issues for NR V2X Lenovo, Motorola Mobility discussion Rel-16

R2-2003114 SL RSRP report triggering Ericsson discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003293 Open HARQ Issues Fraunhofer HHI, Fraunhofer IIS discussion R2-2000328

R2-2003295 Reporting of Sensing Result for Mode 1 UEs Fraunhofer HHI, Fraunhofer IIS, AT&T, Deutsche Telekom discussion R2-2000327

R2-2003312 Remaining issues on RRC for NR V2X Nokia, Nokia Shanghai Bell discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003338 Draft CR 38.331 Remaining issues on RRC for V2X Sidelink Nokia, Nokia Shanghai Bell draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL-Core

R2-2003347 RLF handling under multiple PC5-RRC connections Kyocera discussion

R2-2003520 Summary document on for AI 6.4.2.1 - RRC aspects Huawei, HiSilicon discussion Late

R2-2003528 Remaining issues for Sidelink AS Reconfiguration Qualcomm Finland RFFE Oy discussion

R2-2003536 Draft CR to 38.331 on AS reconfiguration failure Qualcomm Finland RFFE Oy draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL

R2-2003645 Remaining issues on RRC specification ASUSTeK discussion Rel-16 38.331 5G\_V2X\_NRSL-Core

R2-2003646 Clarification on UE behaviour for sidelink RoHC configuration ASUSTeK draftCR Rel-16 38.331 16.0.0 F 5G\_V2X\_NRSL-Core

R2-2003722 RRC connection initiation trigger for SLRB configuration handling Samsung Electronics Co., Ltd discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003759 CR on new RRC connection initiation trigger in V2X Samsung Electronics Co., Ltd CR Rel-16 38.331 16.0.0 1586 - F 5G\_V2X\_NRSL-Core

#### 6.4.2.2 Others

Including email discussion [Post109e#20] and remaining control plane issues other than RRC, e.g. capability, idle/inactive UE procedures, etc. This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting. Summary documents are provided by the corresponding CR rapporteurs (capability: OPPO, idle/inactive: ZTE).

R2-2002604 Open aspects on mode 2 operation Intel Corporation discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002638 Summary of [Post109e#20] V2X Remaining UE capability issues (OPPO) OPPO report Rel-16 5G\_V2X\_NRSL-Core Late

R2-2002639 Summary of capability related Tdoc submitted to R2#109bis-E OPPO report Late

R2-2002661 Further issues on the mismatch of UE capabilities in unicast sidelink Nokia, Nokia Shanghai Bell discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002771 Remaining Issues on NR V2X Resource Allocation for Zone Configuration ITRI discussion 5G\_V2X\_NRSL-Core

R2-2002808 Discussion on Interoperability of V2X UEs camped in different cells Apple discussion 5G\_V2X\_NRSL-Core

R2-2002829 Discussion on inter-RAT Cell Selection/Reselection CATT discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002830 Introduce a new IE in SIB1 to indicate the anchor frequency only CATT draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL-Core

R2-2002859 Left issues on UE capability for NR V2X LG Electronics France discussion Rel-16 38.331 5G\_V2X\_NRSL-Core

R2-2003097 Remaining issues of cell (re)selection for NR V2X Lenovo, Motorola Mobility discussion Rel-16

R2-2003214 UE capability left issue for NR V2X Ericsson discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003366 Remaining issue on RRC state transition for groupcast ITRI discussion 5G\_V2X\_NRSL-Core

R2-2003515 Remaining issues on cell reselection for sidelink in TS 38.304 Huawei, HiSilicon discussion

R2-2003516 Draft CR to TS 38.304 on cell (re)selection for sidelink Huawei, HiSilicon draftCR Rel-16 38.304 16.0.0 5G\_V2X\_NRSL

R2-2003603 Clarification on cell reselection CATT draftCR Rel-16 38.304 16.0.0 5G\_V2X\_NRSL-Core

R2-2003721 Further discussion on cell reselection for V2X Samsung Electronics Co., Ltd discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003756 Correction on cell reselection for V2X Samsung Electronics Co., Ltd CR Rel-16 38.331 16.0.0 1585 - F 5G\_V2X\_NRSL-Core

R2-2003779 Summary of NR V2X cell (re-)selection ZTE Corporation discussion Rel-16 5G\_V2X\_NRSL-Core

#### 6.4.2.3 ASN.1 issues

*Including documents related to class 3 ASN.1 review issues that require WI-specific discussion. This agenda item will utilize a summary document to facilitate treatment of topics during the e-meeting. Summary document is provided by RRC CR rapporteur (Huawei).*

R2-2002624 Correction on SL configuration procedure [N009] OPPO discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002625 Correction on SL configuration procedure [N009] OPPO draftCR Rel-16 38.331 16.0.0 F 5G\_V2X\_NRSL-Core

R2-2002626 Left issues on inter-RAT UAI configuration and CBR report [N038] OPPO discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002627 Left issues on inter-RAT UAI configuration and CBR report [N038] OPPO draftCR Rel-16 38.331 16.0.0 F 5G\_V2X\_NRSL-Core

R2-2002628 Left issues on inter-RAT UAI configuration and CBR report [N038] OPPO draftCR Rel-16 36.331 16.0.0 F 5G\_V2X\_NRSL-Core

R2-2002629 Correction on RLF report via SUI message [N037, RIL-O306] OPPO discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002630 Correction on RLF report via SUI message [N037, RIL-O306] OPPO draftCR Rel-16 38.331 16.0.0 F 5G\_V2X\_NRSL-Core

R2-2002721 Cleanup of requirements on maintenance of PC5-RRC connection [N.016][N.021] MediaTek Inc. discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003206 [E035, E036, E042, E044, E045, E056, E062] Miscellaneous corrections for NR V2X Ericsson draftCR Rel-16 38.331 16.0.0 F 5G\_V2X\_NRSL-Core Late

R2-2003207 [E040, E060] Correction to AS configuration failure in NR V2X Ericsson draftCR Rel-16 38.331 16.0.0 F 5G\_V2X\_NRSL-Core Late

R2-2003208 [E059] Alignment of terminology for toAddModList and toReleaseList Ericsson draftCR Rel-16 38.331 16.0.0 F 5G\_V2X\_NRSL-Core Late

R2-2003209 [E055, E057, E058] Missing initiation actions in NR V2X RRC procedure Ericsson draftCR Rel-16 38.331 16.0.0 F 5G\_V2X\_NRSL-Core Late

R2-2003210 [E055, E057, E058] Missing initiation actions in NR V2X RRC procedure Ericsson draftCR Rel-16 36.331 16.0.0 F 5G\_V2X\_NRSL-Core Late

R2-2003211 [E061] Correction on sl-Failure in SidelinkUEInformation Ericsson draftCR Rel-16 38.331 16.0.0 F 5G\_V2X\_NRSL-Core Late

R2-2003212 [E046, E047] Correction to CBR measurements for V2X Ericsson draftCR Rel-16 36.331 16.0.0 F 5G\_V2X\_NRSL-Core Late

R2-2003213 [E046, E047] Correction to CBR measurements for V2X Ericsson draftCR Rel-16 38.331 16.0.0 F 5G\_V2X\_NRSL-Core Late

R2-2003215 [048] Missing RAN1 agreements to transmission of SLSS for NR V2X Ericsson draftCR Rel-16 38.331 16.0.0 F 5G\_V2X\_NRSL-Core Late

R2-2003432 Ambiguity on which SL carrier frequency to be released (N.040) vivo discussion

R2-2003433 No CBR based PSSCH tx parameters configuration to mode 1 UE (N.041) vivo discussion

R2-2003434 Sidelink communication reception (N.042) vivo discussion

R2-2003435 Frequency resources configuration for actually used PSFCH transmissions (N.043) vivo discussion

R2-2003436 Align PSFCH Configuration of TX and RX resource pools (N.044) vivo discussion

R2-2003517 Discussion on Inter-RAT measurement reporting related issue for NR SL in TS 36.331 [N.011] Huawei, HiSilicon discussion

R2-2003518 Draft CR on inter-RAT measurement reporting related issue in TS 36.331 [N.011] Huawei, HiSilicon draftCR Rel-16 36.331 16.0.0 5G\_V2X\_NRSL

R2-2003560 Summary document of 6.4.2.3 for ASN.1 related issues in V2X session Huawei, HiSilicon discussion Rel-16 5G\_V2X\_NRSL-Core Late

R2-2003599 Clarification on resource usage in case of exceptional cases [ Issue #N.026] CATT draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL-Core Late

R2-2003600 Clarification on sidelink RRC reconfiguration failure[ Issue #N.028] CATT draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL-Core Late

R2-2003601 Clarification on SUI transmission[ Issue #N.024] CATT draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL-Core Late

R2-2003623 Discussion on the SL configuration in CU-DU architecture Huawei, HiSilicon discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003624 Draft LS on SL configuration in CU-DU architecture to R3 Huawei, HiSilicon LS out Rel-16 5G\_V2X\_NRSL-Core To:RAN3

R2-2003625 Draft CR to support the SL configuration in CU-DU architecture Huawei, HiSilicon discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003673 Clarification of SLRB configuration for IP SDU or non-IP SDU Samsung Electronics Co., Ltd discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003674 Clarification of SLRB configuration for IP SDU or non-IP SDU Samsung Electronics Co., Ltd draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL-Core

R2-2003675 NR V2X TX profile configuration Samsung Electronics Co., Ltd discussion Rel-16 5G\_V2X\_NRSL-Core R2-1915941

R2-2003676 NR V2X TX profile configuration Samsung Electronics Co., Ltd draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL-Core

R2-2003677 NR Sidelink PDCP out of order delivery configuration Samsung Electronics Co., Ltd discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003678 NR Sidelink PDCP out of order delivery configuration Samsung Electronics Co., Ltd draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL-Core

R2-2003679 Clarification for SLRB configuration procedures Samsung Electronics Co., Ltd discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003680 Clarification for SUI message transmission Samsung Electronics Co., Ltd discussion Rel-16 5G\_V2X\_NRSL-Core

### 6.4.3 User plane

#### 6.4.3.1 MAC

Including email discussion [Post109e#21], [Post109e#22], and remaining MAC issues. This agenda item will utilize a summary document to facilitate treatment of topics during the e-meeting. Summary document is provided by MAC CR rapporteur (LG).

R2-2002558 Remaining Issues\_Sidelink CSI Reporting and Interruption handling Samsung Electronics Co., Ltd discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002559 SR Trigger for Sidelink CSI Reporting Samsung Electronics Co., Ltd draftCR Rel-16 38.321 16.0.0 F 5G\_V2X\_NRSL-Core

R2-2002565 Discussion on NR V2X remaining MAC issues ZTE Corporation, Sanechips discussion 5G\_V2X\_NRSL-Core

R2-2002568 (draft)CR on TS 38.321 for NR V2X on miscellaneous issues ZTE Corporation, Sanechips draftCR Rel-16 38.321 16.0.0 B 5G\_V2X\_NRSL-Core

R2-2002569 (draft)CR on TS 36.321 for NR V2X on miscellaneous issues ZTE Corporation, Sanechips draftCR Rel-16 36.321 16.0.0 D 5G\_V2X\_NRSL-Core

R2-2002603 Miscellaneous MAC issues Intel Corporation discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002623 Draft-CR on left issues of 38.321 OPPO draftCR Rel-16 38.321 16.0.0 B 5G\_V2X\_NRSL-Core

R2-2002648 Left issues on MAC running CR OPPO discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002809 Remaining issues on NR V2X MAC Design Apple discussion 5G\_V2X\_NRSL-Core

R2-2002831 Remaining Issues on MAC CATT discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002832 Clarification on the impact of configured grant and CSI MAC CE CATT draftCR Rel-16 38.321 16.0.0 5G\_V2X\_NRSL-Core

R2-2002955 Discussion on NR-V2X MAC left issues Fujitsu discussion Rel-16 5G\_V2X\_NRSL-Core R2-2000774

R2-2003025 Clarification for UL/SL prioritization in MAC spec MediaTek Inc. discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003026 Remaining MAC issues MediaTek Inc. discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003110 MAC left issues Ericsson discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003112 Correction on mode 2 resource selection procedure and SR configuration for SL CSI report Ericsson CR Rel-16 38.321 16.0.0 0718 - F 5G\_V2X\_NRSL-Core

R2-2003116 Remaining aspects of NR V2X Tx UE behavior Lenovo, Motorola Mobility, Deutsche Telekom, Fraunhofer HHI and Fraunhofer IIS, Continental Automotive GmbH, MediaTek, Bosch discussion 5G\_V2X\_NRSL-Core

R2-2003122 Remaining MAC Issues Lenovo, Motorola Mobility discussion 5G\_V2X\_NRSL-Core

R2-2003224 Groupcast HARQ feedback from RX UE without location information Futurewei discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003240 Remaining MAC Issues for NR V2X Interdigital discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003292 Discussion on LCH selection Fraunhofer HHI, Fraunhofer IIS discussion

R2-2003332 SL groupcast with Option-2 HARQ Nokia, Nokia Shanghai Bell discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003398 Remaining issues for SL-SCH MAC subheader Qualcomm Finland RFFE Oy discussion Rel-16 R2-2001550

R2-2003437 Remaining MAC issues vivo discussion

R2-2003521 Remaining Part of [Offline Disc#704] Identified proposals to V2X MAC LG Electronics Inc. discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003522 Report of [Post109e#21] Remaining MAC Issues (LG) LG Electronics Inc. discussion Rel-16 5G\_V2X\_NRSL-Core Late

R2-2003523 [Post109e#22] CR to 38.321 on Corrections to NR sidelink LG Electronics Inc. CR Rel-16 38.321 16.0.0 0730 - F 5G\_V2X\_NRSL-Core Late

R2-2003524 Remaining V2X MAC Issues LG Electronics Inc. discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003533 Draft CR to 38.321 for MAC SL-SCH subheader Qualcomm Finland RFFE Oy draftCR Rel-16 38.321 16.0.0 5G\_V2X\_NRSL

R2-2003555 Discussion on remaining MAC Open issues for 5G V2X with NR SL Huawei, Hisilicon discussion

R2-2003556 Draft CR to TS 38.321 on remaining MAC Open issues for 5G V2X with NR SL Huawei, Hisilicon draftCR Rel-16 38.321 16.0.0 5G\_V2X\_NRSL-Core

R2-2003557 Draft CR to TS 38.331 on remaining MAC Open issues for 5G V2X with NR SL Huawei, Hisilicon draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL-Core

R2-2003602 Clarification on the impact of configured grant CATT draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL-Core

R2-2003640 Draft 38.321 CR on remaining MAC issues vivo draftCR Rel-16 38.321 16.0.0 5G\_V2X\_NRSL

R2-2003736 Discussion on BSR prioritization issue Beijing Xiaomi Mobile Software discussion Late

R2-2003740 Discussion on BSR prioritization issue Beijing Xiaomi Mobile Software discussion

R2-2003757 Summary of MAC open issues for NR sidelink LG Electronics France report Rel-16 5G\_V2X\_NRSL-Core Late

R2-2003776 Draft CR to 38.321 on SL process for reception Qualcomm Finland RFFE Oy draftCR Rel-16 38.321 16.0.0 5G\_V2X\_NRSL-Core

#### 6.4.3.2 Others

Including email discussion [Post109e#19], [Post109e#23], and remaining user plane issues other than MAC, e.g. RLC, PDCP, SDAP, etc. This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting. Summary documents are provided by the corresponding CR rapporteurs (RLC: Ericsson, PDCP: CATT, SDAP: Vivo).

R2-2002566 Discussion on NR V2X remaining user plane issues ZTE Corporation, Sanechips discussion 5G\_V2X\_NRSL-Core

R2-2002570 (draft)CR on TS 38.323 for NR V2X on miscellaneous issues ZTE Corporation, Sanechips draftCR Rel-16 38.323 16.0.0 F 5G\_V2X\_NRSL-Core

R2-2002649 Discussion on PDCP open issues OPPO discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002650 38323\_CRyyyy\_(REL-16)\_Correct on PDCP for NR V2X OPPO draftCR Rel-16 38.323 16.0.0 B 5G\_V2X\_NRSL-Core

R2-2002810 Remaining issues on NR V2X PDCP Design Apple discussion 5G\_V2X\_NRSL-Core

R2-2002833 Remaining Issues on PDCP CATT discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2002834 38.323 draftCR for NR V2X CATT draftCR Rel-16 38.323 16.0.0 5G\_V2X\_NRSL-Core

R2-2002861 Left issue on SDAP for NR V2X LG Electronics France discussion Rel-16 37.324 5G\_V2X\_NRSL-Core

R2-2003111 Report for email discussion Pose109e#19 V2X Remaining RLC issue Ericsson discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003113 Editorial Corrections on SDAP for NR sidelink Ericsson CR Rel-16 37.324 16.0.0 0015 - F 5G\_V2X\_NRSL-Core

R2-2003237 Report on email discussion [Post109e#23][V2X] Remaining RLM/RLF Issue InterDigital discussion Rel-16 5G\_V2X\_NRSL-Core Late

R2-2003238 Draft CR to 38.321 for HARQ-Based RLF at TX UE InterDigital, Kyocera draftCR Rel-16 38.321 16.0.0 5G\_V2X\_NRSL-Core

R2-2003239 Draft CR to 38.331 for HARQ-Based RLF at TX UE Interdigital, Kyocera draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL-Core

R2-2003510 Discussion on the SLRB PDCP header format Huawei, HiSilicon discussion

R2-2003511 Draft CR on the PDCP format for NR SL unicast Huawei, HiSilicon draftCR Rel-16 38.323 16.0.0 5G\_V2X\_NRSL

R2-2003512 Draft CR on the PDCP format for NR SL unicast Huawei, HiSilicon draftCR Rel-16 38.323 16.0.0 5G\_V2X\_NRSL Withdrawn

R2-2003535 Draft CR to 38.323 for NR PC5-S and PDCP header Qualcomm Finland RFFE Oy draftCR Rel-16 38.323 16.0.0 5G\_V2X\_NRSL

R2-2003563 RLF based on HARQ operation ITL discussion Rel-16

R2-2003668 Remaining PDCP issues Nokia, Nokia Shanghai Bell discussion 5G\_V2X\_NRSL-Core

R2-2003681 Discussion for SL PDCP open issues Samsung Electronics Co., Ltd discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003682 SL PDCP COUNT wrap around avoidance and initial value of RX\_DELIV Samsung Electronics Co., Ltd draftCR Rel-16 38.323 16.0.0 5G\_V2X\_NRSL-Core

R2-2003683 SL PDCP COUNT wrap around avoidance Samsung Electronics Co., Ltd draftCR Rel-16 38.331 16.0.0 5G\_V2X\_NRSL-Core

R2-2003774 Summary of PDCP remaining issues on NR V2X CATT discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2003819 Summary of NR V2X SDAP related contribution vivo discussion Rel-16 5G\_V2X\_NRSL-Core

## 6.5 Optimisations on UE radio capability signalling

(RACS-RAN-Core; leading WG: RAN2; REL-16; started: Mar 19; target; Jun 20; WID: [RP-191088](file:///C:\Data\3GPP\archive\RAN\RAN%2384\Tdocs\RP-191088.zip), SR: RP-200163). Documents in this agenda item will be handled in a break out session.

R2 part is 100%. Only corrections.

Tdoc limitation: 1 per company

### 6.5.1 Organisational

Including incoming LSs, rapporteur inputs, etc.

Contributions in this AI are reserved for WI rapporteur inputs and do not count towards the tdoc limits.

R2-2002725 Work plan for RACS-RAN work item MediaTek Inc., CATT discussion Rel-16

R2-2002726 Work plan for RACS-RAN work item MediaTek Inc., CATT discussion Rel-16 Withdrawn

R2-2003290 Correction to transfer of UE capabilities at HO for RACS (38.331) ZTE Corporation, Ericsson,MediaTek Inc.,Sanechips CR Rel-16 38.331 16.0.0 1553 - F RACS-RAN-Core

R2-2003305 Correction to transfer of UE capabilities at HO for RACS (36.331) MediaTek Inc., Ericsson, ZTE Corporation, Sanechips CR Rel-16 36.331 16.0.0 4256 - F RACS-RAN-Core

### 6.5.2 Corrections

Including contributions/TPs/DraftCRs on RACS-specific Class 3 ASN.1 review aspects, if any. For these, no individual company CRs should be submitted: please consult with the RRC CR rapporteurs first ([Nathan.Tenny@mediatek.com](mailto:Nathan.Tenny@mediatek.com) for 36.331 and [Gao.Yuan66@zte.com.cn](mailto:Gao.Yuan66@zte.com.cn) for 38.331).

R2-2002881 Transfer of segmented UECapabilityInformation by SRB2 Samsung discussion Rel-16 RACS-RAN-Core R2-2000765

R2-2003471 UE capability indication for segmentation Huawei, HiSilicon discussion Rel-16 RACS-RAN-Core R2-2001329

## 6.6 Void

## 6.7 NR Industrial Internet of Things (IoT)

(NR\_IIOT-Core; leading WG: RAN2; REL-16; started: Mar 19; target; Jun 20; WID: [RP-192324](file:///C:\Data\3GPP\TSGR\TSGR_84\docs\RP-191561.zip) SR: RP-200165)

Time budget: 3 TU

Tdoc Limitation: 8 tdocs

### 6.7.1 General

Rapporteur input. Incoming LS etc.

R2-2003166 Summary of IIOT WI agreements and open issues Nokia (rapporteur) discussion Rel-16 NR\_IIOT

### 6.7.2 RRC Open Issues and Corrections

#### 6.7.2.1 Accurate reference timing

Summary by vivo if needed

* [AT109bis-e][025][IIOT] Accurate Reference Timing (Vivo)

Status: Not yet Started, will be started after on-line session April 21

Scope: Treat topics in 6.7.2.1, open issues and corrections, in particular parts of R2-2003809 that are not treated on-line.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

CLOSED

R2-2004150 Report of [AT109bis-e][025][IIOT] Accurate Reference Timing (vivo) vivo

[025]

- Chair: the first agreement point is the most critical one. There are split views among companies, however those companies that prefer option 2 think also option 1 can work, whereas a couple of companies have stronger objections to option 2 based on technical and business concerns. In addition, the majority support option 1.

ONLINE

- Ericsson wonder if we shold also apply prohibit timer. Ericsson think this is common and would like to consider this.

- CATT think there is more things to discuss, i.e. delta signalling etc.

- Chair think that prohibit timer can still be on the table, regardless the baseline TP.

- Huawei think we shold have a new message.

* [025] The request of the reference time information is sent via the *UEAssistanceInformation* message.
* [025] The UE indication of the delivery periodicity of the reference time is not supported in this release.
* [025] The GPS time of the Rel-16 reference time information is provided independently without using the Rel-15 GPS 10ms resolution of SIB9.
* [025] The reference time is encoded by using multiple fields, as the current specification, i.e. no optimization into a single field.
* [025] The text proposal given in Annex A is used as the baseline for the request of the reference time information.

R2-2003809 Summary of 6.7.2.1 Accurate reference timing vivo discussion Rel-16 NR\_IIOT-Core

At least P1 and P2 on-line. Possibly all.

DISCSUSSION

P2 / P1

- Ericsson do not support P2. SIB9 would need a lot of work, and this was not in the summary. On a high level: Reference time is in SIB9 and in Unicast delivery. Ericson think we have not decided which message should apply. RRC reconfiguration or RRC information. Thre may be R3 impact.

- LG agrees that traffic is predictable, and network shold know if the UE need accurate reference time, and think P1 is not needed. MTK agrees with this, and wonder if we will discuss how such request is triggered. Ericsson think indeed this is known by the network, and think this is already replied by SA2. Ericsson think that relying on network impl is the simplest. CATT think it is safe to go with P1 it will always work. Samsung think the gain of UE request is marginal. Nokia think that P1 is more important than P2. The CN information may not always be available. Nokia further think IIOT implementations might not use TSN but instead some other IIOT communication standard.

- Oppo think request should be supported, and think there are situations when the UE request is the only way.

- Samsung agrees with Ericsson, additional work will be needed. Legacy SIB will not be supported for all so some cap indication is needed.

- Intel agrees to P1 and for requested case P2 also work ok. Some change may be needed but we haven’t done stage-3 work yet so ok. Nokia agrees, and doesn’t agree there are blocking issues (Ericsson and Samsung). Vivo agrees as well, and think we could use RRC reconfiguration with these. Huawei also agrees. CATT also think P2 should be attempted first,

- Huawei comment on Ericsson paper that P1 is not needed. Review shows that CN information may not be sufficient.

- ZTE agrees that P2 brings some work, but think we should attempt P1 first.

- Ericsson think that if the UE requests the information then the network do not know if the new info shall be provided or not. Ericsson further wonders if we need then the information in two different messages.

- P1, Nokia think that it doesn’t need to be specified the trigger to ask for this, and point out that we have several such statements already, e.g. overheating. Nokia think furhernore that the network can configure this. Nokia think further that the network could possibly provide the timing information also when not requested by the UE as we don’t specify network behaviour. Samsung are ok with P1 if we use the UE assistance info framework.

- Ericsson think that we should only have one mechanism. We should not tailor On Demand SI too much if we use this meachanism.

* The CONNECTED UE can request the reference time information.

R2-2003167 Remaining issues for accurate reference time delivery Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IIOT

- Intel think this works, but also the alternative works.

* Offline: the signaling solution, (iron out what are the two proposals and their fundamental difference)

R2-2002705 On UE need for time synch Ericsson discussion NR\_IIOT-Core

R2-2002706 On encoding of reference time information Ericsson discussion NR\_IIOT-Core

R2-2002752 Remaining Issues on Accurate Reference Timing CATT discussion NR\_IIOT-Core

R2-2002772 UE report of the reference time interest vivo discussion R2-2000489

R2-2002940 Reference Timing Delivery of gNB Samsung discussion Rel-16 NR\_IIOT-Core

R2-2002976 On-demand SI requesting for reference time information by connected UE OPPO discussion Rel-16 NR\_IIOT-Core

R2-2002993 On-demand SI request for RRC connected UEs Huawei, HiSilicon discussion Rel-16 NR\_IIOT-Core Revised

R2-2003294 FFS on accurate reference timing request ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd discussion Rel-16 NR\_IIOT-Core

R2-2003397 ASN.1 improvements for saving 32 bits in reference time in SIB9 Qualcomm Incorporated discussion

R2-2003404 Draft CR 1 for On-demand SI request for RRC connected UEs Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_IIOT-Core Late

R2-2003406 Draft CR 2 for On-demand SI request for RRC connected UEs Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_IIOT-Core Late Withdrawn

R2-2003505 Remaining Issues for Accurate reference timing CMCC discussion Rel-16 NR\_IIOT-Core

R2-2003738 On-demand SI request for RRC connected UEs Huawei, HiSilicon discussion Rel-16 NR\_IIOT-Core R2-2002993

Exceeding tdoc limit – not treated

Moved from 6.0.3:

R2-2003202 [E050] Support of SIB9 for on-demand SIB procedure in CONNECTED Ericsson discussion Rel-16 NR\_unlic-Core, 5G\_V2X\_NRSL-Core, NR\_IIOT-Core, LTE\_NR\_DC\_CA\_enh-Core, NR\_pos-Core Late

#### 6.7.2.2 Scheduling Enhancements

Summary by CMCC if needed

* [AT109bis-e][026][IIOT] Scheduling Enhancements (CMCC)

Status: Not yet Started, will be started after on-line session April 21

Scope: Treat topics in 6.7.2.2, open issues and corrections, in particular parts of R2-2003497 that are not treated on-line.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC. Result to be merged into CRs in other email discussions (e.g. RRC, possibly MAC).

[026]

- Chair: It seems to me that the proposals 1, 2, 3, 6, 7 can be agreed as they have full support. Proposal 4 has objections and seems not agreeable. For proposal 5, companies seems to have different understanding of the need for further specification (need discussion). Furthermore there seems to be some interest for the proposals from R2-2003586.

ONLINE

- CMCC wonders about the 2/7 symbols proposal. Chair clarifies hat this is the “Proposal 4 has objections and seems not agreeable.”

* [026] Not to introduce restrictions of how many SPS configurations are supported, e.g. per cell/ per UE (SPS/CG).
* [026] No need to capture limitation of maximum CG/SPS configurations per MAC entity in TS 38.300.
* [026] Support up to 32 SPS configurations per MAC entity.
* [026] SPS-Config and SPS-ConfigList in BWP-DownlinkDedicated cannot be configured simultaneously at a given time.
* [026] ConfiguredGrantConfig and ConfiguredGrantConfigList in BWP-UplinkDedicated cannot be configured simultaneously at a given time.

R2-2003169 Determining the ‘closest N’ for CG Type-1 initialization Nokia, Nokia Shanghai Bell draftCR Rel-16 38.321 16.0.0 NR\_IIOT

DISCUSSION

- LG think the only needed change is the time domain offset

- Nokia indicate that also the “closest in time” agreement was not implemented. Samsung think this is mainly just a clarification and are ok with it.

- Huawei and LG think the UE can just choose when to start. Vivo think the next opportunity may sometimes be too close in time. Oppo agrees. Sequans also think this is not needed, possibly could state in a note that UE doesn’t need to start with N = 0 or 1 etc.

- Chair: it seems that it is assumed that start/intializaion is from the moment of configuration, and opportunities are available from there, but detailed timing such as UE processing time is for implementation.

- Sequans think the change to time domain offset is also not needed and think it can be discussed again with “closest N”.

* The change in the time domain offset seems agreeable, not sufficient support to clarify closest N, at least the way that was proposed here, can discuss more.

R2-2003586 Remaining issues on configured grant type 1 resources calculation ZTE, Sanechips discussion Rel-16 NR\_IIOT-Core

DISCUSSION

- LG think current behaivour is option 2, and there is no confusion/ambiguity. However this may need to be clarified, but foresee no TS change.

- Ericsson think that for R16 we need to assume option 1.

- CMCC think option 1 is the general assumption. Main question is on the TS change.

- Huawei also support option 1, and think we can clarify with a Note or something like that.

- Nokia agrees and we need to clarify somehow.

- MTK think there may be many CGs, and they need to be maintained in parallel. MTK thikn it is possible to re-sync at BWP switch (option 2)

- Oppo think we shold be careful to not force the UE to calculate continuously (option1)

* FFS if Option 1 or 2

R2-2003497 Summary of AI 6.7.2.2 IIoT Scheduling Enhancements CMCC (Summary Rapporteur) discussion Rel-16 NR\_IIOT-Core Late

R2-2002657 Handling of collision between TSN transmission and measurement gap Spreadtrum Communications discussion

R2-2002663 Discussion about open issues for CG and SPS Huawei, HiSilicon discussion Rel-16 NR\_IIOT-Core

R2-2002707 SPS CG remaining issues Ericsson discussion NR\_IIOT-Core

R2-2002708 TSC AI clarifications: meaning of arrival time Ericsson discussion NR\_IIOT-Core R2-2000790

R2-2002753 Remaining issues for multiple SPS and CG configurations CATT discussion NR\_IIOT-Core

R2-2002932 Split secondary path for split bearer LG Electronics Inc. discussion Rel-16 NR\_IIOT-Core

R2-2002933 Absence of duplication state in moreThanTwoRLC LG Electronics Inc. discussion Rel-16 NR\_IIOT-Core

R2-2002946 Configuration of Configured Grant and Semi-Persistent Scheduling Samsung discussion Rel-16 NR\_IIOT-Core

R2-2003168 Periodicities of multiple of 2 or 7 symbols for CG Nokia, Nokia Shanghai Bell, Ericsson, NTT Docomo discussion Rel-16 NR\_IIOT

R2-2003504 RRC Open Issues for Scheduling Enhancements CMCC discussion Rel-16 NR\_IIOT-Core

Exceeding tdoc limit – not treated

R2-2002709 Draft LS: TSC AI clarifications for arrival time Ericsson LS out NR\_IIOT-Core R2-2000791 To:SA2

#### 6.7.2.3 Other

NOTE specific RRC issues to be submitted here, also for EHC, PDCP duplication, intra-UE prioritization and multiplexing etc.

Summary if needed, issues coord, and RRC CR by Ericsson

* [AT109bis-e][027][IIOT] RRC (Ericsson)

Status: Started

Scope: Treat topics in 6.7.2.3, include to make CRs.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

Part 2: RRC CRs implementing IIOT decisions from this meeting.

R2-2004233 Summary on [AT109bis-e][027][IIOT] RRC (Ericsson) Ericsson

* [027] Remove sps-PUCCH-AN-ListPerCodebook from SPS-ConfigList and add sps-PUCCH-AN-List in PUCCH-Config. This can be revisited if RAN1 impacts are identified.
* [027] SPS-ConfigList can be used to configure one SPS Configuration per BWP.

R2-2002703 Correction of NR IIOT Ericsson draftCR Rel-16 38.331 16.0.0 NR\_IIOT-Core Late

R2-2002704 Correction of NR IIOT Ericsson draftCR Rel-16 36.331 16.0.0 NR\_IIOT-Core Late

R2-2002754 DraftCR of RRC Open Issues CATT draftCR Rel-16 38.331 16.0.0 NR\_IIOT-Core

R2-2002974 Draft-CR on RRC open issues of 38.331 OPPO draftCR Rel-16 38.331 16.0.0 F NR\_IIOT-Core

R2-2002975 Draft-CR on split transmission of 38.323 OPPO draftCR Rel-16 38.323 16.0.0 F NR\_IIOT-Core

R2-2003377 Draft CR on introduction of EHC in LTE Huawei, HiSilicon draftCR Rel-16 36.331 16.0.0 NR\_IIOT-Core

R2-2003526 SPS Ack configuration in RRC Qualcomm Incorporated discussion

### 6.7.3 MAC Open Issues and Corrections

#### 6.7.3.1 Intra-UE prioritization and multiplexing

Resource conflicts between dynamic grant (DG) and configured grant (CG) PUSCH and conflicts involving multiple CGs. UL data/control and control/control resource collision according to WID.

Including outcome of the email discussion [Post109e#50][IIOT] Remaining issues intra-UE prioritization (Nokia). On intra-UE prioritization open issues only the email discussion in planned to be treated.

* [AT109bis-e][028][IIOT] Intra-UE prioritization and MAC (Nokia, Samsung)

Scope: Treat topics in 6.7.3.1, based on R2-2003226, started after on-line session April 21 (Nokia) and treat topics in 6.7.3.2 (that do not overlap with 6.7.1), based on R2-2003124, and R2-2002847, started immediately (Samsung).

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC (Nokia, Samsung)

Part 1b: LS to R1 on Intra-UE prioritization (Nokia)

Part 2: Agreeable CR (Samsung)

R2-2003226 Summary of e-mail discussion: [Post109e#50][IIOT] Remaining issues intra-UE prioritization Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IIOT-Core

DISCUSSION

P2

- Vivo think this is just for PUSCH and not SR.

- LG think this is ok, and the only thing need to be discussed are MAC CEs that are not transmitted due to deprioritzation

- ZTE think BFR and LBT failure MAC CE need to be prioritized. ZTE think that a MAC CE in a deprioritized transmission is not important, we have a retransmission mechanis,

- Nokia think we need to focus now, and can skip optimizations to next release.

- CATT think we now change so Data has higher priority than Control MAC CEs. CATT agrees with LG.

- Huawei think that we need to determine priority for MAC CEs for transmissions that contain only MAC CE.

- Oppo think we should discuss MAC CE priority in next release.

P3

- Lenovo think the case that there is a TB with only MAC CE is a corner case and think this would be up to UE implementation. ZTE agrees we can leave this to UE impl in this release. MTK agrees.

- LG think that Option 1 is the natural one. Ericsson agrees. Samsung agrees as well. Lenovo think that current spec is option 2 as no priority is defined for MAC CE. Huawei agree with Lenovo.

- Vivo think that current spec is option 1 and at least a note is needed to specify Option 2

P5

- Samsung think R1 will not change anything and think R2 shall resolve this issue. Huawei think R1 need to consider to change, and LS should be sent.

- Sony think this only applies for preemtion case, and think R2 TS is ok, but R1 need to change,

- Nokia think R1 will not change at this stage.

- Ericsson think either approach could work, and think we anyway need an LS to explain what we have agreed. There is a gap.

- CATT think there is a big gap between R1 and R2, and R2 can work on a solution meanwhile that assumes no R1 change.

- QC think last time we didn’t send the LS and think the NOTE proposed by Nokia is good.

- IDT think this is not a common case, so we think as well that the note approach is good.

- MTK think we can ask which transmission would take place.

* MAC CE is not considered for grant prioritization in Rel-16.
* On P3, it seems no company have strong reasons that we need to do either Option 1 or 2, can be resolved later (TS rapporteur to choose what is simplest)
* On P5, we send an LS to R1 informing on R2 agreements and the current gap, we explain the solutions on the table and we ask R1 for feedback (quick). LS to R1: Nokia (in email discussion above). LS approval 24h after stable.

R2-2004121 LS on Intra-UE Prioritization RAN2 LS out

* [028] LS is approved.

R2-2004130 Summary of Offline Discussion [028]: Intra-UE prioritization and MAC, Part 1 Nokia, Samsung

Agreements email [028] :

* No text change in TS 38.321 to address the cases with multiple overlapping SPS PDSCH.
* Adopt the first TP in R2-2003226 (the one targets at Section 5.4.2.1. of TS38.321) to address the issue of HARQ buffer flushing when the grant for autonomous retransmission is again de-prioritized.
* For Rel-16, no enhancement is introduced for SR counter and SR Prohibit Timer.
* Data/Data and Data/SR prioritization should be configured as a single configuration
* Both Multiple Entry Configured Grant Confirmation MAC CE and Duplication RLC Activation/Deactivation MAC CE are assigned to LCID Set2.
* Autonomous retransmission should be continued upon reactivation of Type-2 CG if and only if the TBS remains the same.
* NOTE5 in MAC to be updated: “NOTE 5: If *cg\_RetransmissionTimer* is not configured, A HARQ process is not shared between different configured grant configurations.”
* Keep Rel-15 principle for resource overlapping with uplink grant received in RAR:   
  A) For the collision with case UL grant received in RAR (or addressed to temporary C-RNTI) vs CG, the uplink grant in RAR is prioritized and used for transmission. (need text change).   
  B) For the collision with case UL grant received in RAR (or addressed to temporary C-RNTI) vs DG, it is up to UE implementation which resource is chosen. (no need to change)”
* Capture “De-prioritized uplink grant is excluded in prioritization of other grants”. CATT’s TP in the comment is a baseline (adding “which was not already deprioritized”)
* Use *AutonomousTx*.
* Use the MAC Correction CR, R2-2002947, for Part 2 discussion on CR update.

ONLINE

Remaining issue: On the following issue: “Further discuss whether “already de-prioritized uplink grant needs to be prioritized after high-priority data arrival” happens for the case of two PDUs generation.”

- Chair: do we need to capture such timing issues in the TS?

- ZTE think this is not needed.

- Fujitsu think whenever a grant is received the UE will reevaluate priority, whether there will be sequential processing or just in time processing only

- Vivo and Samsung think prioritization can be done before the very last time, Samsung think a condition may need to be removed. LG agrees, and we need to resolve this. Lenovo think indeed there is an issue to fix.

- Oppo think this is a corner case and think that it is not acceptable to change logical channel priority too many times.

- Nokia think this is very relevant to the LS we sent to R1 and think we can re-evaluate when we receive a reply. CATT doesn’t agree, and think the condition added lst meeting was a mistake, it should be possible for the UE to wait until last minute.

- Ericsson think that a smart UE shall wait until the last moment to do prioritization.

- Huawei think we added the condition for a different case. Think people are aligned on he intended UE behaviour. Can add a note to clarify.

- Chair: it seems some change is needed, and it seems there is some alignment that the UE shall be allowed to do prioritization at last point in time.

* Continue offline (028)

R2-2004257 Offline-028: Intra-UE prioritization and MAC, Part 3 Samsung

DISCUSSION

P1

- Fujitsu think pre-emption in R1 may be impacted. CATT think there could be R1 impact when pre-empted/preemptiing PDUs have same L1 priority, but we already asked this in the LS.

- ZTE think we should avoid to specify timing in detail. If needed a note may be appropriate.

P2

- QC think this doesn’t need to be fixed. Network can avoid this and it is rare. CATT think this can be fixed only under unreasonable assumptions. Noia agrees with CATT. Vivo agrees that such configuration is not want we want.

- LG think the original intention of intra-UE prioritization is not met and we need to fix the TS. Ericsson agrees with LG, and think one possibility is to just remove a change from last meeting.

* RAN2 confirms the following problematic scenario happens for the case of two PDUs generation: “An already de-prioritized uplink grant needs to be prioritized after high-priority data arrival. But the current normative text does not allow it”
* How to fix in the spec will be discussed in the next meeting.

R2-2002710 Remaining issues on intra-UE prioritization and multiplexing Ericsson discussion NR\_IIOT-Core

R2-2002774 Transmission of Deprioritized PDU after CG Change vivo discussion

R2-2002775 Clarification on the intra-UE prioritization per UE or per cell vivo discussion Withdrawn

R2-2002777 Clarification on the generation of the two MAC PDUs vivo discussion

R2-2002778 Discussion on the deprioritized CG vivo discussion

R2-2002779 Remaining issues for SR and PUSCH collision vivo discussion R2-2000497

R2-2002877 Align the Priority Handling for overlapping UL Grants between MAC and PHY Sharp discussion Rel-16

R2-2002941 Priority of SR Triggered by MAC CE Samsung discussion Rel-16 NR\_IIOT-Core

R2-2002971 Discussion on two MAC PDUs with the same L1 priority OPPO, ZTE Corporation, Sanechips discussion Rel-16 NR\_IIOT-Core

R2-2002972 Draft LS on two MAC PDUs with the same L1 priority OPPO discussion Rel-16 NR\_IIOT-Core

R2-2003003 Consideration on grant priority determination with MAC CE LG Electronics Inc. discussion Rel-16 NR\_IIOT-Core

R2-2003023 Consideration on delayed CG confirmation MAC CE LG Electronics Polska discussion Rel-16 38.321 NR\_IIOT-Core

R2-2003027 Consideration on sharing HARQ process in IIoT LG Electronics Polska discussion Rel-16 NR\_IIOT-Core

R2-2003363 MAC handling of dropped SRs InterDigital, Inc. discussion Rel-16 NR\_IIOT-Core

R2-2003590 Discussion on the intra-UE collision case involving the Msg.3 ZTE, Sanechips, OPPO discussion Rel-16 NR\_IIOT-Core

R2-2003591 Remaining issue on the collision between SR and PUSCH ZTE, Sanechips discussion Rel-16 NR\_IIOT-Core

R2-2003592 Remaining issues on HARQ conflict between configured grant and dynamic grant ZTE, Sanechips discussion Rel-16 NR\_IIOT-Core

R2-2003647 Prioritization between CG and uplink grant for Msg3 or MSGA payload ASUSTeK discussion Rel-16 38.321 NR\_IIOT-Core

R2-2003648 Handling UL grant prioritization with non-overlapping PUSCH duration ASUSTeK discussion Rel-16 NR\_IIOT-Core

R2-2002942 Remaining Issues on Intra-UE Prioritization Samsung discussion Rel-16 NR\_IIOT-Core

R2-2002945 De-prioritization by Other Deprioritized Grants Samsung discussion Rel-16 NR\_IIOT-Core

#### 6.7.3.2 Other

Summary if needed and MAC CR by Samsung.

Treatment by email, see above

R2-2003124 Summary of MAC Open Issues and Corrections Samsung discussion Rel-16 NR\_IIOT-Core Late

Moved from 6.7.1:

R2-2002947 Correction for NR IIOT in 38.321 Samsung CR Rel-16 38.321 16.0.0 0712 - F NR\_IIOT-Core

R2-2004195 Correction for NR IIOT in 38.321 Samsung CR Rel-16 38.321 16.0.0 0712 1 F NR\_IIOT-Core

* [028] Endorsed

R2-2003225 Autonomous transmission during BWP switch Lenovo, Motorola Mobility discussion Rel-16 NR\_IIOT-Core

### 6.7.4 PDCP Open Issues and Corrections

#### 6.7.4.1 PDCP Duplication

Summary if needed and PDCP CR by LG

* [AT109bis-e][029][IIOT] PDCP Duplication and CRs (LG)

Scope: Treat topics in 6.7.4.1, based on R2-2003772, and make CR,

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC, For P1 P2 P7 discussion expected to start after on-line session April 21. Discussion on other proposals/issues can start immediately.

Part 2: Implement this meetings agreements in CR

R2-2004170 Summary of offline-029 PDCP Duplication and CRs LG

* [029] noted

Email [029] agreements

* Rel-15 Duplication MAC CE is *not* used for Rel-16 Duplication configuration (with more than two RLC entities configured).
* For DRBs, if the *duplicationState* is absent, the initial duplication states are deactivated for all RLC entities.
* Add the text in the *duplicationState* field description as “For DRBs, if the field is absent, the initial PDCP duplication states are deactivated for all associated RLC entities.”
* Update the definition of split secondary RLC entity to specify the setting of the split secondary RLC entity for the PDCP entity associated with only two RLC entities
* The following text proposal is agreed: Split secondary RLC entity: in dual connectivity, the RLC entity other than the primary RLC entity which is responsible for split bearer operation. If the PDCP entity is associated with two RLC entities, the split secondary RLC entity is the RLC entity other than the primary RLC entity. If the PDCP entity is associated with more than two RLC entities, the split secondary RLC entity is configured by upper layers.
* Agree to clearly specify that PDCP duplication is deactivated for the DRB when all secondary RLC entities are deactivated
* Confirm that index I for RLCi field of Rel-16 MAC CE is determined by ascending order of logical channel ID of secondary RLC entities in MCG and SCG, and remove the Editor’s Note from the MAC specification.
* No clarification is needed for CA duplication.

DISCUSSION ONLINE

- CATT think the first one is not the way to go but are ok to compromise.

- Sharp think that duplicationstate shall not be configured at all for SRB as it has no meaning for SRB.

- Oppo want to clarify that Rel-15 MAC CE can still be used when two RLC entities are configured. Oppo wonder if R15 MAC CE can be used for a DRB with two RLC entities if R16 configuration with > 2 RLC entities is there. LG think no. LG think R15 MAC CE has DRBI field with all DRBs configured with duplication. LG think this was the compromise.

- Samsung wonder if for SRB there can be > 2 RLC entities without duplication configured. Huawei think maybe yes, e.g. to have DL duplication but not UL duplication. LG think that in such case the UL SRB operates as a split bearer. LG think that for CA duplication such configuration is not possible,

* Confirm that duplication is always activated for all RLC entities for SRB (meaning e.g. that *duplicationState* has no meaning for SRB).

R2-2004171 38323 CR0046 Clarification on PDCP duplication LG Electronics Inc. CR Rel-16 38.323 16.0.0 0046 - F NR\_IIOT-Core

* [029] Endorsed (however this does not contain EHC update)

R2-2003772 Summary of A.I. 6.7.4.1 PDCP Duplication LG Electronics Inc. (Summary rapporteur) report Rel-16 NR\_IIOT-Core

R2-2002656 Discussion on efficient PDCP duplication base on configuration of gNB Spreadtrum Communications discussion

R2-2002711 PDCP duplication open issues Ericsson discussion NR\_IIOT-Core

R2-2002755 Discussion on the Rel-15 Duplication MAC CE CATT discussion NR\_IIOT-Core R2-2000117

R2-2002756 Leftovers of PDCP Duplication CATT discussion NR\_IIOT-Core

R2-2002757 Discussion on LCH-to-Cell Restriction in Rel-16 PDCP Duplication CATT discussion NR\_IIOT-Core

R2-2002776 Discussion on the Rel-15 PDCP duplication MAC CE vivo discussion

R2-2002817 Open issues for PDCP Duplication Enhancements Apple discussion NR\_IIOT-Core R2-2000597

R2-2002862 PDCP duplication states of the associated RLC entities when duplicationState is absent Sharp discussion Rel-16

R2-2002934 Use of Rel-15 Duplication MAC CE LG Electronics Inc. discussion Rel-16 NR\_IIOT-Core

R2-2002935 Issues when all secondary RLC entities are deactivated LG Electronics Inc. discussion Rel-16 NR\_IIOT-Core

R2-2002943 Open Issues on PDCP Duplication Samsung discussion Rel-16 NR\_IIOT-Core

R2-2002956 R15 MAC CE duplication on/off for R16 duplication on/off Fujitsu discussion Rel-16 NR\_IIOT-Core R2-2000776

R2-2002977 Coexist of R15 and R16 duplication (de-)activation MAC CE OPPO discussion Rel-16 NR\_IIOT-Core

R2-2002978 Application of Rel-15 MAC CE on Rel-16 duplication OPPO draftCR Rel-16 38.321 16.0.0 F NR\_IIOT-Core

R2-2002995 Open issues on PDCP duplication enhancements Huawei, HiSilicon discussion Rel-16 NR\_IIOT-Core

R2-2003095 Reuse R15 MAC CE on/off for R16 duplication Lenovo, Motorola Mobility discussion Rel-16

R2-2003227 Remaining Issues for PDCP Duplication Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IIOT-Core

R2-2003320 Remaining issues in PDCP duplication enhancements Intel Corporation discussion Rel-16 NR\_IIOT-Core

R2-2003506 Remaining Issues for PDCP Duplication CMCC discussion Rel-16 NR\_IIOT-Core

R2-2003587 Remaining issues on enhanced PDCP duplication ZTE, Sanechips discussion Rel-16 NR\_IIOT-Core

### 6.7.4.2 Ethernet Header Compression

Summary if needed by Intel

This Ai is assumed to be treated by email.

* [AT109bis-e][030][IIOT] Ethernet Header Compression (Intel)

Scope: Treat topics in 6.7.4.2, based on R2-2003782 and comments.

Part 1: Determine which issues that need resolution, find agreeable proposals, can consider attempt to agree TP. Deadline: April 24 0700 UTC. Result to be merged to PDCP CRs.

[030]

- Chair Comment: I notice that Sony assumes a higher ambition level for EHC feedback, which seems to be the reason for the divergent comments. Although I agree that the Sony comments on a high level indeed make sense, so far we have only agreed to use feeback for ack of context establishment, so for protocol design I think we need to stick to that, unless we can have further functional agreements, which seems unlikely at this late stage. I hope that with this explanation the majority view can be accepted.

- Chair Comment: The R2 tradition is not to deliberately specify reserved bits for extendability, as UP protocols can easily be extended by specifying new formats configured by CP. Some cases for extendibility, e.g. external EHC usage and EHC profile were previously discussed but not agreed. So the current interpretation is that the desire from some companies to have extension bits is for the moment mainly a desire and not really a requirement. Furthermore, regarding the smaller header, it seems several companies think 7-bit CID vs 6-bit CID make a significant difference in the usefulness of the small header. Given this situation and the fact that there is majority support I’d strongly suggest agreement for P1, P2, P3.

Agreements email [030]:

* Decompressor behaviour is unspecified if it receives a compressed packet with an unknown context ID (not much support to specify).
* Network reconfigures *ethernetHeaderCompression* only upon reconfiguration involving PDCP re-establishment.
* For LTE, EHC cannot be configured together with UDC.
* In RRC specifications, replace parameter *ehc-HeaderSize* with *ehc-CID-Length*.
* The clause “5.12.3 Protocol parameters” in TS 38.323 and clause “5.14.3 Protocol parameters” in TS 36.323 are VOID’ed.
* If both SDAP header and EHC are configured, how to distinguish SDAP control PDU from SDAP Data PDU is left to UE implementation.
* There is no reserved bit/codepoint in EHC header.
* CID length is 7 or 15 bits, for 1 byte and 2 byte EHC header, respectively.
* EHC feedback packet format in TS 38.323 v16.0.0 clause A2.1.2 can be confirmed, i.e. there is 1 reserved bit in EHC feedback packet.
* postpone the discussion to next meeting regarding whether to capture example of operation on different Ethernet header structures as informative text.

R2-2003782 Summary on Ethernet Header Compression Intel Corporation discussion 6.7.4.2 Ethernet Header Compression

R2-2003172 Clarification on Ethernet frame handling by EHC Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IIOT

R2-2002669 EHC absence of Q-Tags and NACK feedback Sony discussion Rel-16 NR\_IIOT-Core R2-2000834

R2-2002712 Remaining EHC issues Ericsson discussion NR\_IIOT-Core

R2-2002718 Discussion about remaining issues of EHC Huawei, HiSilicon discussion Rel-16 NR\_IIOT-Core

R2-2002758 The Remaining Issues on EHC CATT discussion NR\_IIOT-Core

R2-2002773 Reserved value in the EHC header vivo discussion

R2-2002908 Leftover issues for EHC Samsung discussion NR\_IIOT\_URLLC\_enh

R2-2002936 Length of CID field in EHC header LG Electronics Inc. discussion Rel-16 NR\_IIOT-Core

R2-2002973 Discussion on EHC format OPPO discussion Rel-16 NR\_IIOT-Core

R2-2003171 EHC remaining issues Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IIOT

R2-2003296 Remaining issues for EHC in TSC ZTE Corporation, Sanechips discussion Rel-16 NR\_IIOT-Core

R2-2003321 Remaining issues in Ethernet header compression Intel Corporation discussion Rel-16 NR\_IIOT-Core

Moved from 6.7.5:

R2-2003755 On reserved bit in EHC header Qualcomm Incorporated discussion

R2-2003758 Remaining issue for EHC NTT DOCOMO INC. discussion NR\_IIOT-Core Late

### 6.7.5 Stage-2 Corrections

Summary if needed and 38300 CR by Nokia

This AI is not treated at this meeting, Discussions are postponed.

R2-2002994 PDCP duplication terminology definition and impacts to cell restriction Huawei, HiSilicon draftCR Rel-16 38.300 16.1.0 NR\_IIOT-Core

R2-2003170 Stage-2 updates for IIOT Nokia, Nokia Shanghai Bell CR Rel-16 38.300 16.1.0 0215 - F NR\_IIOT Late

R2-2003534 Introduction of IIOT features to TS 37.340 Huawei, HiSilicon CR Rel-16 37.340 16.1.0 0195 - B NR\_IIOT-Core

### 6.7.6 UE capabilities

Summary if needed and running 38306 CR by Nokia

* [AT109bis-e][031][IIOT] UE capabilities (Nokia)

Scope: Treat topics in 6.7.6, based on R2-2003793 and comments.

Part 1: Determine which issues that need resolution, find agreeable proposals, can consider TP. Deadline: April 24 0700 UTC.

Part 2: Running CRs (for 38.306, 36.306, 38.822?)

Agreements email [031]

* Data vs. data and SR vs. data prioritization are signalled as a single capability.
* Do not introduce additional signalling for maximum value of supported periodicities for SPS/CG.
* Introduce an indication parameter, e.g. maxNumberEHC-ContextsSN, in ConfigRestrictInfoSCG IE of CG-ConfigInfo Message, to indicate the maximum number of EHC contexts allowed to the SN terminated bearer.

R2-2004131 Summary of [AT109bis-e][031][IIOT] UE capabilities

DISCUSSION

3

- LG think the max number should be 65k, considering the joint.

- MTK clarifies tat the 32k is the limit set by the max CID

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- MTK think these are URLLC UEs and can be point ot point connected (it is not a router). MTK thikn the latency guarantee is impacted by dimensioning no of contexts, MTK suggest 2

- Vivo thikn we could have a device that need very low number.

- LG agrees, 2 could be ok. Oppo too and thikn ROHC the min is 2. Intel agrees that 2 could be a good lower number (or 4).

- Ericsson point out that we assume a very simple context, and thikn the device is in any case not cheap. Samsung think EHC is similar with ROHC, also applied at low date rate.

- QC think 8 or 16 could be more suitable but would be ok with 2, but in the case of 2 we might need to clarify 1+1. Huawei support QC. Vodafone think 16 or 8 could work.

- Nokia think that if we assume same as ROHC it would be 2+2, and if we assume VLAN etc, we need additional contexts for those, at least 8 pref 16.

- MTK point out that we are just discussing the range and as there is a valid use case for 2, the range should start there.

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- CATT would like to make this conditional to R1 LS reply. Huawei think we indeed may need to revisit.

- QC thikn we should work on this. CATT agrees don’t want to delay.

- LG think it is safe if we assume that we always configure both together.

- vivo think the issue is when MAC prioritization is configured, and it cannot be configured without Phy prioritization. Huawei agrees.

- Samsung think there is no problem anyway.

- Ericsson support assumption ..

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- Huawei think for R15 we only have the number of DRBs as requirement, not RLC channels.

- MTK think the min number of RLC channels is not changes by this discussion.

* UE signals the maximum number of supported EHC contexts across all DRBs using *maxNumberEHC-Contexts* parameter.
* *maxNumberEHC-Contexts* parameter indicates the number of EHC contexts supported by the UE’s compressor and decompressor jointly.
* Maximum value of *maxNumberEHC-Contexts* that can be signalled is 65536
* Minimum value of *maxNumberEHC-Contexts* that can be signalled is 2
* FFS whether additional capability or related signalling is needed for joint EHC and ROHC operation
* R2 assumes that PHY-based prioritization and LCH-based prioritization are configured independently and one can be configured without the other (assumption may be modified when LS reply from R1 is received)
* FFS how to address the scenario where PHY layer of a UE which is not configured to perform PHY-based prioritization, receives from MAC layer two MAC PDUs related to overlapping grants.
* FFS: Revisit the discussion on the number of DRBs the UE shall support with Rel-16 PDCP duplication after the related issue for Rel-15 is clarified.
* FFS: Allow additional RLC entities to be configured for duplication without impacting the maximum number of DRBs. Discuss further the conditions for allowing additional RLC entities to be configured.

R2-2003793 Summary of 6.7.6 UE capabilities for IIOT Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IIOT-Core

R2-2003174 UE radio access capabilities introduction for NR IIOT WI Nokia, Nokia Shanghai Bell draftCR Rel-16 38.306 16.0.0 B NR\_IIOT

R2-2003175 UE feature list introduction for NR IIOT WI Nokia, Nokia Shanghai Bell draftCR Rel-16 38.822 15.0.1 B NR\_IIOT

R2-2002713 UE capability for IIoT Ericsson discussion NR\_IIOT-Core

R2-2002759 Remaining issues for UE capabilities CATT discussion NR\_IIOT-Core

R2-2002815 Discussion on DRBs Supported with Rel16 PDCP Duplication Enhancement Apple discussion NR\_IIOT-Core

R2-2002816 DRBs Supported with Rel16 PDCP Duplication Enhancement Apple CR Rel-16 38.306 16.0.0 0276 - F NR\_IIOT-Core

R2-2002944 UE Capability for IIOT Samsung discussion Rel-16 NR\_IIOT-Core

R2-2003173 UE feature list and capabilities remaining issues Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_IIOT

R2-2003174 UE radio access capabilities introduction for NR IIOT WI Nokia, Nokia Shanghai Bell draftCR Rel-16 38.306 16.0.0 B NR\_IIOT

R2-2003175 UE feature list introduction for NR IIOT WI Nokia, Nokia Shanghai Bell draftCR Rel-16 38.822 15.0.1 B NR\_IIOT

R2-2003322 Remaining issues in IIoT UE capability Intel Corporation discussion Rel-16 NR\_IIOT-Core

R2-2003503 RRC Open Issues for UE capabilities CMCC discussion Rel-16 NR\_IIOT-Core

R2-2003732 Open issues in Intra-UE prioritization capability Qualcomm Incorporated discussion

Exceeding tdoc limitation – not treated

R2-2003315 Draft CR on introduction of miscellaneous EHC capabilities in LTE Huawei, HiSilicon draftCR Rel-16 36.306 16.0.0 NR\_IIOT-Core

## 6.8 NR Positioning Support

(NR\_pos-Core; leading WG: RAN1; REL-16; started: Mar 19; target; Jun 20; WID: [RP-](file:///C:\Data\3GPP\TSGR\TSGR_84\docs\RP-191156.zip)200218, SR: RP-200217). Documents in this agenda item will be handled in a break out session

Time budget: 1 TU

### 6.8.1 Organisational

Including incoming LSs, rapporteur inputs, etc.

R2-2002520 LS on outcome of email discussions on aperiodic SRS for positioning configuration from RAN1#100e (R1-2001483; contact: Ericsson) RAN1 LS in Rel-16 NR\_pos To:RAN2

R2-2002529 LS on gNB measurements report mapping for NR Positioning (R4-2002280; contact: Qualcomm) RAN4 LS in Rel-16 NR\_pos-Core To:RAN2, RAN3 Cc:RAN1

R2-2003316 Discussion on capabilities for NR positioning Intel Corporation discussion Rel-16 NR\_pos-Core Late

R2-2003317 Introduction of UE positioning capabilities Intel Corporation draftCR Rel-16 37.355 16.0.0 NR\_pos-Core Late

### 6.8.2 Architecture and protocol aspects

No documents should be submitted to 6.8.2. Please submit to 6.8.2.x.

#### 6.8.2.1 Stage 2

Including impact to 36.305 and 38.305. This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on submitted tdocs).

Including outcome of email discussion [Post109e#30][NR/Pos] Non-periodic SRS for positioning (Huawei)

Including outcome of email discussion [Post109e#31][NR/Pos] Details of spatial relation for positioning (Huawei)

Contributions on issues already resolved in email discussions [Post109e#30] and [Post109e#31] are discouraged.

Tdoc limitation: 1 tdoc

R2-2002914 Clarification on UE Positioning Architecture in 38.305 for Rel-16 CATT draftCR Rel-16 38.305 16.0.0 B NR\_pos-Core

R2-2002939 Discussion on reusing Rel-15 SRS for Multi-RTT ZTE Corporation discussion

R2-2003054 DraftLS\_RAN3\_non-periodicSRSPositioning Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003055 DraftCR for SSB configuration in LPP spec Huawei, HiSilicon draftCR Rel-16 37.355 16.0.0 NR\_pos-Core

R2-2003056 DraftCR for SSB configuration in RRC spec Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core

R2-2003057 DraftLS\_RAN3\_On Spatial relations for positioning Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003060 Text proposal to stage-2 specification Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003068 [Post109e-30][NRPos] Non-periodic SRS for positioning (Huawei) Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003069 [Post109e-31][Pos] Details of spatial relation for positioning (Huawei) Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003348 Various Corrections to NR Positioning Qualcomm Incorporated discussion

R2-2003396 Text Proposal to clarify the meaning of GNSS term ESA, Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_pos-Core

R2-2003620 Summary document for agenda item 6.8.2.1 - NR Positioning Stage 2 Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_pos-Core Late

R2-2003731 On supporting of non-periodic SRS for positioning Samsung R&D Institute UK discussion

#### 6.8.2.2 RRC

Including impact to 36.331 and 38.331. This agenda item will utilize a summary document to facilitate treatment of topics during the e-meeting.

Tdoc limitation: 1 tdoc

R2-2002598 Broadcast of additional assistance data NextNav, AT&T, FirstNet, Intel, Polaris Wireless CR Rel-16 38.331 16.0.0 1508 - C NR\_pos, NR\_pos-Core

R2-2002617 Discussion on GAP configuration and request for NR positioning vivo discussion Rel-16 NR\_pos-Core

R2-2003059 DraftCR on LocationMeasurementIndication Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core

R2-2003136 Recommendation message from LMF to gNB for SRS configuration Ericsson discussion Rel-16

R2-2003137 UL SRS UE Capability Ericsson discussion

R2-2003729 SSB configuration for DL-/UL-only method in RRC Samsung R&D Institute UK discussion

R2-2003769 Summary of agenda item 6.8.2.2 for RRC Huawei discussion Rel-16 NR\_pos-Core

#### 6.8.2.3 LPP

This agenda item will utilize a summary document to facilitate treatment of topics during the e-meeting. Note that documents on specific ASN.1 issues should be submitted to AI 6.8.2.4.

Tdoc limitation: 1 tdoc

R2-2002938 Discussion on additional path reporting ZTE Corporation discussion

R2-2003061 Remaining issues with LPP Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003130 Measurement Reporting for UE based positioning Ericsson discussion Rel-16

R2-2003318 Handling on TRP-ID Intel Corporation discussion Rel-16 NR\_pos-Core

R2-2003730 UE Rx – Tx time difference definition in LPP Samsung R&D Institute UK discussion

#### 6.8.2.4 LPP ASN.1 issues

Any issues related only to the details of ASN.1 in 37.355. CRs should not be submitted to this agenda item except by the specification rapporteur.

The ASN.1 review process for LPP will proceed from company contributions in this meeting. Issues should be submitted under this agenda item and will be collected by the specification rapporteur. The review process will proceed by email after this meeting with issues to be concluded at RAN2#110-e.

R2-2002915 Clarification on SFN0-Offset and DL-AoD report in LPP ASN.1 CATT draftCR Rel-16 37.355 16.0.0 B NR\_pos-Core

R2-2003066 DraftCR for NR-DL-PRS-Config Huawei, HiSilicon draftCR Rel-16 37.355 16.0.0 NR\_pos-Core

R2-2003067 Miscellaneous Corrections to LPP ASN.1 Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003143 Overhead in current structure Ericsson discussion Rel-16

R2-2003144 Important LPP structural aspects Ericsson discussion Rel-16

R2-2003349 Various Corrections to NR Positioning Qualcomm Incorporated discussion

R2-2003350 LPP clean-up Qualcomm Incorporated discussion Rel-16 NR\_pos-Core Late

#### 6.8.2.5 MAC

Including impact to 38.321.

Tdoc limitation: 1 tdoc

R2-2002618 Discussion on the impact of DRX on SRS for NR positioning vivo discussion Rel-16 NR\_pos-Core

R2-2003062 Correction to SP SRS actication deactivation MAC CE Huawei, HiSilicon draftCR Rel-16 38.321 16.0.0 NR\_pos-Core

R2-2003063 Runnnig CR to MAC spec for R16 Positioning Huawei, HiSilicon draftCR Rel-16 38.321 16.0.0 NR\_pos-Core

=> Revised in R2-2003768

R2-2003768 Running CR to MAC spec for R16 Positioning Huawei, HiSilicon draftCR Rel-16 38.321 16.0.0 NR\_pos-Core

R2-2003135 Change LCID to eLCID for SP Positioning SRS Activation/Deactivation MAC CE Ericsson CR Rel-16 38.321 16.0.0 0720 - F NR\_pos-Core

#### 6.8.2.6 Broadcast assistance data

This agenda item will utilize a summary document to facilitate treatment of topics during the e-meeting.

Tdoc limitation: 1 tdoc

R2-2002916 Summary of the agreement and left issues on Broadcast Assistance Data CATT discussion Rel-16 38.331 NR\_pos-Core

R2-2003058 DraftCR for on-demand SI request for positioning Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core

R2-2003132 On the need of unicast tag for positioning si-BroadcastStatus Ericsson discussion Rel-16

R2-2003607 Summary for Broadcast of Assistance Data CATT discussion Late

#### 6.8.2.7 UE-based positioning

This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on submitted tdocs).

Tdoc limitation: 1 tdoc

R2-2003064 Discussion on UE-based positioning Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003145 Remaining issues with NR RAT dependent UE-based positioning Ericsson discussion Rel-16

### 6.8.3 Other

Tdoc limitation: 1 tdoc

R2-2003065 Discussion on UL-ECID Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003376 On UE RxTx Measurements Ericsson discussion Rel-16

## 6.8 NR Positioning Support

(NR\_pos-Core; leading WG: RAN1; REL-16; started: Mar 19; target; Jun 20; WID: [RP-](file:///C:\Data\3GPP\TSGR\TSGR_84\docs\RP-191156.zip)200218, SR: RP-200217). Documents in this agenda item will be handled in a break out session

Time budget: 1 TU

### 6.8.1 Organisational

Including incoming LSs, rapporteur inputs, etc.

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R2-2002529 LS on gNB measurements report mapping for NR Positioning (R4-2002280; contact: Qualcomm) RAN4 LS in Rel-16 NR\_pos-Core To:RAN2, RAN3 Cc:RAN1

R2-2003316 Discussion on capabilities for NR positioning Intel Corporation discussion Rel-16 NR\_pos-Core Late

R2-2003317 Introduction of UE positioning capabilities Intel Corporation draftCR Rel-16 37.355 16.0.0 NR\_pos-Core Late

### 6.8.2 Architecture and protocol aspects

No documents should be submitted to 6.8.2. Please submit to 6.8.2.x.

#### 6.8.2.1 Stage 2

Including impact to 36.305 and 38.305. This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on submitted tdocs).

Including outcome of email discussion [Post109e#30][NR/Pos] Non-periodic SRS for positioning (Huawei)

Including outcome of email discussion [Post109e#31][NR/Pos] Details of spatial relation for positioning (Huawei)

Contributions on issues already resolved in email discussions [Post109e#30] and [Post109e#31] are discouraged.

Tdoc limitation: 1 tdoc

R2-2002914 Clarification on UE Positioning Architecture in 38.305 for Rel-16 CATT draftCR Rel-16 38.305 16.0.0 B NR\_pos-Core

R2-2002939 Discussion on reusing Rel-15 SRS for Multi-RTT ZTE Corporation discussion

R2-2003054 DraftLS\_RAN3\_non-periodicSRSPositioning Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003055 DraftCR for SSB configuration in LPP spec Huawei, HiSilicon draftCR Rel-16 37.355 16.0.0 NR\_pos-Core

R2-2003056 DraftCR for SSB configuration in RRC spec Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core

R2-2003057 DraftLS\_RAN3\_On Spatial relations for positioning Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003060 Text proposal to stage-2 specification Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003068 [Post109e-30][NRPos] Non-periodic SRS for positioning (Huawei) Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003069 [Post109e-31][Pos] Details of spatial relation for positioning (Huawei) Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003348 Various Corrections to NR Positioning Qualcomm Incorporated discussion

R2-2003396 Text Proposal to clarify the meaning of GNSS term ESA, Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_pos-Core

R2-2003620 Summary document for agenda item 6.8.2.1 - NR Positioning Stage 2 Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_pos-Core Late

R2-2003731 On supporting of non-periodic SRS for positioning Samsung R&D Institute UK discussion

#### 6.8.2.2 RRC

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Tdoc limitation: 1 tdoc

R2-2002598 Broadcast of additional assistance data NextNav, AT&T, FirstNet, Intel, Polaris Wireless CR Rel-16 38.331 16.0.0 1508 - C NR\_pos, NR\_pos-Core

R2-2002617 Discussion on GAP configuration and request for NR positioning vivo discussion Rel-16 NR\_pos-Core

R2-2003059 DraftCR on LocationMeasurementIndication Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core

R2-2003136 Recommendation message from LMF to gNB for SRS configuration Ericsson discussion Rel-16

R2-2003137 UL SRS UE Capability Ericsson discussion

R2-2003729 SSB configuration for DL-/UL-only method in RRC Samsung R&D Institute UK discussion

R2-2003769 Summary of agenda item 6.8.2.2 for RRC Huawei discussion Rel-16 NR\_pos-Core

#### 6.8.2.3 LPP

This agenda item will utilize a summary document to facilitate treatment of topics during the e-meeting. Note that documents on specific ASN.1 issues should be submitted to AI 6.8.2.4.

Tdoc limitation: 1 tdoc

R2-2002938 Discussion on additional path reporting ZTE Corporation discussion

R2-2003061 Remaining issues with LPP Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003130 Measurement Reporting for UE based positioning Ericsson discussion Rel-16

=> Revised in R2-2003811

R2-2003811 Measurement Reporting for UE based positioning Ericsson, Deutsche Telekom discussion Rel-16

=> Revised in R2-2003822

R2-2003822 Measurement Reporting for UE based positioning Ericsson, Deutsche Telekom discussion Rel-16 NR\_pos-Core

R2-2003318 Handling on TRP-ID Intel Corporation discussion Rel-16 NR\_pos-Core

R2-2003730 UE Rx – Tx time difference definition in LPP Samsung R&D Institute UK discussion

R2-2003783 Summary of LPP agenda item 6.8.2.3 Qualcomm Incorporated discussion Rel-16 NR\_pos-Core

#### 6.8.2.4 LPP ASN.1 issues

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The ASN.1 review process for LPP will proceed from company contributions in this meeting. Issues should be submitted under this agenda item and will be collected by the specification rapporteur. The review process will proceed by email after this meeting with issues to be concluded at RAN2#110-e.

R2-2002915 Clarification on SFN0-Offset and DL-AoD report in LPP ASN.1 CATT draftCR Rel-16 37.355 16.0.0 B NR\_pos-Core

R2-2003066 DraftCR for NR-DL-PRS-Config Huawei, HiSilicon draftCR Rel-16 37.355 16.0.0 NR\_pos-Core

R2-2003067 Miscellaneous Corrections to LPP ASN.1 Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003143 Overhead in current structure Ericsson discussion Rel-16

R2-2003144 Important LPP structural aspects Ericsson discussion Rel-16

R2-2003349 Various Corrections to NR Positioning Qualcomm Incorporated discussion

R2-2003350 LPP clean-up Qualcomm Incorporated discussion Rel-16 NR\_pos-Core Late

R2-2003781 CR 37.355 V16.0.0, Corrections to the introduction of NR positioning Ericsson CR Rel-16 37.355 16.0.0 0256 - F NR\_pos-Core

#### 6.8.2.5 MAC

Including impact to 38.321.

Tdoc limitation: 1 tdoc

R2-2002618 Discussion on the impact of DRX on SRS for NR positioning vivo discussion Rel-16 NR\_pos-Core

R2-2003062 Correction to SP SRS actication deactivation MAC CE Huawei, HiSilicon draftCR Rel-16 38.321 16.0.0 NR\_pos-Core

R2-2003063 Runnnig CR to MAC spec for R16 Positioning Huawei, HiSilicon draftCR Rel-16 38.321 16.0.0 NR\_pos-Core

=> Revised in R2-2003768

R2-2003768 Running CR to MAC spec for R16 Positioning Huawei, HiSilicon draftCR Rel-16 38.321 16.0.0 NR\_pos-Core

R2-2003135 Change LCID to eLCID for SP Positioning SRS Activation/Deactivation MAC CE Ericsson CR Rel-16 38.321 16.0.0 0720 - F NR\_pos-Core

#### 6.8.2.6 Broadcast assistance data

This agenda item will utilize a summary document to facilitate treatment of topics during the e-meeting.

Tdoc limitation: 1 tdoc

R2-2002916 Summary of the agreement and left issues on Broadcast Assistance Data CATT discussion Rel-16 38.331 NR\_pos-Core

R2-2003058 DraftCR for on-demand SI request for positioning Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 NR\_pos-Core

R2-2003132 On the need of unicast tag for positioning si-BroadcastStatus Ericsson discussion Rel-16

=> Revised in R2-2003810

R2-2003810 On the need of unicast tag for positioning si-BroadcastStatus Ericsson, Deutsche Telekom discussion Rel-16

R2-2003607 Summary for Broadcast of Assistance Data CATT discussion Late

#### 6.8.2.7 UE-based positioning

This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on submitted tdocs).

Tdoc limitation: 1 tdoc

R2-2003064 Discussion on UE-based positioning Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003145 Remaining issues with NR RAT dependent UE-based positioning Ericsson discussion Rel-16

### 6.8.3 Other

Tdoc limitation: 1 tdoc

R2-2003065 Discussion on UL-ECID Huawei, HiSilicon discussion Rel-16 NR\_pos-Core

R2-2003376 On UE RxTx Measurements Ericsson discussion Rel-16

## 6.9 NR mobility enhancements

(NR\_Mob\_enh-Core; leading WG: RAN2; REL-16; started: Jun 18; target; Mar 20; WID: RP-192277). Documents in this agenda item will be handled in a break out session

No documents should be submitted to 6.9.

Treated together with 7.3,

A web conference may be used for handling some of the discussions in this WI, and summary document may be provided for some agenda items under 6.9.

### 6.9.1 Organisational

Including incoming LSs, running CRs, rapporteur inputs, etc

R2-2002744 Corrections to Mobility Enhancements Nokia, Intel Corporation (Rapporteurs) CR Rel-16 38.300 16.1.0 0211 - F NR\_Mob\_enh-Core

R2-2003043 PDCP CR on correction and outcome of [Post109e#11] for DAPS handover Huawei, HiSilicon, Mediatek Inc. CR Rel-16 38.323 16.0.0 0045 - C NR\_Mob\_enh-Core

R2-2003044 PDCP CR on correction and outcome of [Post109e#11] for DAPS handover Huawei, HiSilicon, Mediatek Inc. CR Rel-16 36.323 16.0.0 0282 - C LTE\_feMob-Core

R2-2003368 UE Capability for Rel-16 NR mobility enhancement Intel Corporation draftCR Rel-16 38.306 16.0.0 NR\_Mob\_enh-Core R2-2001092

R2-2003369 UE Capability for Rel-16 NR mobility enhancement Intel Corporation draftCR Rel-16 38.331 16.0.0 NR\_Mob\_enh-Core

### 6.9.2 Reduction in user data interruption during DAPS handover

Contributions on DAPS handovers for LTE and NR are treated jointly in under 7.3.2. Do not use this AI for any item that can be discussed jointly - This AI shall only address NR-specific topics.

Including remaining details (if any) on SDAP handling during DAPS handover.

Tdoc Limitation per company: 1 tdoc (only for NR-specific topics like SDAP that do NOT affect LTE).

R2-2002589 RoHC handling during DAPS handover without key change Ericsson discussion Rel-16 NR\_Mob\_enh-Core R2-2000126

R2-2002799 Non-DAPS DRB Handling when fallback to source Apple discussion NR\_Mob\_enh-Core

R2-2002863 Discussion on consecutive ROHC failure LG Electronics Inc. discussion NR\_Mob\_enh-Core

R2-2003042 Discussion on DAPS HO without key change Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core

### 6.9.3 Conditional handover and fast handover failure recovery

Contributions on conditional handover for LTE and NR are treated jointly under 6.9.3 except where otherwise noted.

No documents should be submitted to 6.9.3. Please submit to 6.9.3.x

#### 6.9.3.1 Open issues and corrections for conditional handover

This AI jointly addresses NR and LTE.

Including outcome of email discussion [Post109e#12][MOB] Resolving open issues for CHO (Nokia)

Tdoc Limitation per company: 1 tdoc.

Contributions on issues already resolved by the email discussion [Post109e#12][MOB] are discouraged.

R2-2002748 On measurement and evaluation during CHO execution Futurewei discussion Rel-16 NR\_Mob\_enh-Core

R2-2002900 T304 running issue when CHO Execution LG Electronics Inc. discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core R2-2001535

R2-2002951 Discussion of some remaining issues for CHO OPPO discussion Rel-16 NR\_Mob\_enh-Core

R2-2002996 Corrections to conditional reconfiguration evaluation PANASONIC R&D Center Germany draftCR Rel-16 38.331 16.0.0 A NR\_Mob\_enh-Core

R2-2003035 CHO and MR-DC operation Ericsson discussion NR\_Mob\_enh-Core

R2-2003105 E-mail discussion report [Post109e#12][MOB] Resolving open issues for CHO Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core

R2-2003106 MCG recovery versus recovery via CHO - Rel-16 impact Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core

R2-2003260 Further details of CHO configuration and execution China Telecom discussion Rel-16

R2-2003333 Clarification on source reconfigiration during CHO Samsung CR Rel-16 38.300 16.1.0 0216 - F NR\_Mob\_enh-Core

R2-2003422 Further consideration on conventional HO overriding a CHO command ZTE Corporation, Sanechips discussion Rel-16 NR\_Mob\_enh-Core

R2-2003577 Discussion on leftovers for CHO Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

R2-2003609 UE configuration release in RRC reestbalishment SHARP discussion NR\_Mob\_enh-Core, LTE\_feMob-Core

#### 6.9.3.2 Open issues and corrections for fast handover failure recovery

This AI only addresses NR.

Including corrections for T312 support.

Tdoc Limitation per company: 1 tdoc

R2-2002599 Discussions on VarRLF-Report Setting Quectel discussion

R2-2002901 Failure handling of both CHO and MR-DC LG Electronics Inc. discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

R2-2003036 Failure handling interaction Ericsson discussion NR\_Mob\_enh-Core

R2-2003578 Discussion on T312 support Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core

#### 6.9.3.3 UE capabilities for conditional handover and fast handover failure recovery

This AI jointly addresses NR and LTE.

Including any remaining UE capability aspects triggered by RAN1/4 or related to existing RAN2 UE capability discussions of CHO (for both LTE and NR WIs) and T312 support (for NR WI).

The documents in this agenda item may be deprioritized in this meeting or used as input to post-meeting email discussion(s).

Tdoc Limitation per company: 1 tdoc

R2-2002902 Consideration on CHO capability LG Electronics Inc. discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

R2-2003028 UE capabilities for CHO and NR T312 Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core Late

R2-2003037 UE capabilities for CHO Ericsson discussion NR\_Mob\_enh-Core

R2-2003579 Discussion on UE capabilities for CHO and T312 Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

### 6.9.4 Conditional PSCell addition/change

No documents should be submitted to 6.9.4. Please submit to 6.9.4.x

#### 6.9.4.1 Open issues and corrections for Conditional PSCell change for intra-SN

Including outcome of email discussion [Post109e#13][MOB] Resolving open issues for CPC (CATT).

Including remaining details, resolution of open issues and corrections CPC for Rel-16.

Contributions on issues already resolved by the email discussion [Post109e#13][MOB] are discouraged.

Tdoc Limitation per company: 1 tdoc

R2-2002749 Clarifications on issues of CPC-intra-SN Futurewei discussion Rel-16 NR\_Mob\_enh-Core

R2-2002800 CPC with SRB3 Configuration Apple discussion NR\_Mob\_enh-Core

R2-2002903 Left Issues for CPC in R16 LG Electronics Inc. discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core R2-2001536

R2-2003038 Remaining issues for conditional PSCell change Ericsson discussion NR\_Mob\_enh-Core

R2-2003100 Remaining issues for CPC Lenovo, Motorola Mobility discussion Rel-16

R2-2003107 On how to close the open issues for Conditional PSCell Change Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core

R2-2003327 Discussion on CPC configuration handling during SCG Release Samsung discussion NR\_Mob\_enh-Core

R2-2003423 Remaining issues for CPC ZTE Corporation, Sanechips discussion Rel-16 NR\_Mob\_enh-Core

R2-2003440 Report of [post109e@13][NR MOB] Resolving open issues for CPC CATT discussion Rel-16 NR\_Mob\_enh-Core Late

R2-2003441 Draft CR for transmission of RRCReconfigurationComplete upon CPC execution CATT draftCR Rel-16 38.331 16.0.0 F NR\_Mob\_enh-Core

=> Revised in R2-2003799

R2-2003799 Draft CR for transmission of RRCReconfigurationComplete upon CPC execution CATT draftCR Rel-16 38.331 16.0.0 F NR\_Mob\_enh-Core

R2-2003442 Draft CR for transmission of RRCReconfigurationComplete upon CPC execution CATT draftCR Rel-16 36.331 16.0.0 F NR\_Mob\_enh-Core

R2-2003580 Discussion the transaction id issues for CPAC Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core

#### 6.9.4.2 UE capabilities for Conditional PSCell change for intra-SN

Including any remaining UE capability aspects of Conditional PSCell change for intra-SN (for NR WI).

The documents in this agenda item may be deprioritized in this meeting or used as input to post-meeting email discussion(s).

Tdoc Limitation per company: 1 tdoc

R2-2002904 Consideration on CPC capability LG Electronics Inc. discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

R2-2003029 UE capabilities for CPC Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core Late

R2-2003039 UE capabilities for conditional PSCell change Ericsson discussion NR\_Mob\_enh-Core

R2-2003581 Discussion on UE capabilities for CPC Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core

### 6.9.5 ASN.1 review of mobility WIs for NR RRC

Including documents related to Class 3 ASN.1 review issues.

This agenda item focuses on **NR RRC** aspects of both LTE and NR mobility WIs – LTE RRC aspects of both LTE and NR mobility WIs should be submitted to 7.3.4. Do not submit contributions on WI-specific open issues that are not captured in the current NR RRC to this agenda item.

R2-2003326 [S350] Discussion on radio bearer handling in DAPS Samsung discussion NR\_Mob\_enh-Core

R2-2003424 [Z255] Correction for Pcell change in case of CPC ZTE Corporation, Sanechips discussion Rel-16 NR\_Mob\_enh-Core

R2-2003664 [H223] Correction on TAG configuration applied to target cell Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core

## 6.10 DC and CA enhancements

(LTE\_NR\_DC\_CA\_enh-Core; leading WG: RAN2; REL-16; started: Jun 18; target; Jun 20; WID: [RP-192336](file:///C:\Data\3GPP\TSGR\TSGR_84\docs\RP-191600.zip), SR: RP-200319, see also guidance in RP 192326)

Time budget: 2 TU

Tdoc Limitation: 6 tdocs

### 6.10.1 General

Including incoming LSsrapporteur inputs, etc

Including outcome of the email discussion [Post109e#37][DCCA] RRC open Issues (Ericsson). Topics treated in this email discussion are not planned to be further treated with other tdocs.

RRC CRs and RRC issues coordination by Ericsson

* [AT109bis-e][032][DCCA] RRC (Ericsson)

Scope: Treat topics in 6.10.1, based on R2-2003383, R2-2003789, R2-2003381, R2-2003382 and comments. Treat also topics in 6.10.4, based on R2-2003790 and comments. Discussion on non-controversial issues/proposals that might not need to be treated on-line can start immediately.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC.

Part 2: CRs capturing agreements from this meeting (incl results from other discussions).

R2-2004120 [AT109bis-e][032][DCCA] RRC (Ericsson) Ericsson

DISCUSSION

“easy agreements”

P10

- Nokia assumes that performance requirements would anyway not change (i.e. would not reuse performance req for connected mode). Ericsson think this is just procedural.

P7

- Huawei think that a Note that contradicts procedure text is a bad idea, but acknowledge this is not so easy. Huawei think there may be better ways.

P9

- ZTE think this is not for UE impl.

- Ericsson explains that this is as LTE. MTK agrees that we can keep it simple and think mostly this will not be a problem.

- QC think that if we agree different in NR than LTE three may be issues.

- Huawei think there is consensus on the intention, but the description is somewhat wrong.

P4

- Oppo wonder if this about network config and the network will ensure this. If yes then ok.

- Ericsson think this is a new issue. QC think we can just agree this and discuss impact later,

“For Discussion”

P1/P2

- Nokia think neither of them are needed. Samsung agrees. QC agrees this is an optimization.

- Ericsson think this also resolves ambiguity on what the network can accept. Vivo also believes that and support. Ericsson think that R15 R16 IEs ambiguity for UL need to be resolved.

- Intel think that if a R16 configured UE is in a R15 network, which is a case when we do full configuration anyway. Vivo think fc is not applicable. Huawei think this R15R16 issue can happen but it is not sure there is an issue, should be a non-critical extension.

- LG think we need this as Bcast control of what the UE measures gives a lot of flexibility, so it means that the UE may report unwanted information.

- Chair: Not sufficient support for now, many companies think this is just oprimization.

P3

- Huawei think this is the same situation as previsouly. Do not support. Nokia don’t think this is needed.

- Chair: Not sufficient support for inter-node signalling

P11

- Huawei think this is useful

P6

- MTK think need R is better. Need S usually causes confusion, and think there is no delta configuration, and the network will always provide this.

- Huawei think that the UE just store in a variable so the need code is not so applicable, the procedure text is more important.

- Samsung think we need to distinguish between top level field (could be S) and sub-fields (should be R)

- Chair: continue this discussion

* RAN2 to confirm that the intention is that NR sleeping cells are not considered for early measurements (i.e. *SMTC2-LP* not included in NR *ssb-MeasConfig)*.
* RAN2 to confirm that the 8 carriers per cell limitation for reporting early measurements does not include the PCell (i.e. 8 neighbor cells can be included for the serving cell carrier and no changes are required regarding the *qualityThreshold* field description.
* The NOTE regarding UE behavior on SSB configuration differences between dedicated and broadcasted signaling to be kept (not sufficient support to change).
* The new rel-16 IE (in 36.331) to enable the reporting of up to 8 EUTRA carriers in early measurement results, will be used to include only the additional 5 carriers that can be reported in rel-16 (as captured in [5])
* When the UE is configured to measure more frequencies than it is configured to report, it is left up to UE implementation on which frequencies to include in the early measurement report.
* The cell quality and beam quality derivation procedures for connected mode will be reused also for early measurements (with appropriate changes to clarify that layer3 filtering is not applied for the case of early measurements). The proposals in R2-2003395/R2-2003718 to be used as baseline
* (For 36.331) to enable the network to configure only NR carriers for early measurements, without the need to include E-UTRA carriers, the definition of the NR carrier list can be included in a separate IE outside the measIdleConfigSIB-r15.
* (For 36.331/38.331) to explicitly capture in the procedure text that the UE will not consider the early measurement carrier list(s) in SIB if it has received any of the carrier lists (i.e. E-UTRA, NR, or both) in RRC(Connection)Release.

R2-2003383 Report on email discussion [Post109e][037][DCCA] RRC open issues (Ericsson) Ericsson discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

DISCUSSION

P7

- Huawei think this is not critical and we don’t need to agree now. Ericsson think this whole section need revision ayway.

P11

- Vivo think this is discussed elsewhere, in R1. MTK also think this is discussed in different context.

- QC has a different opinion. We don’t need to wait for R1.

- Nokia think we sent an LS so we should wait. CATT agfrees.

- ZTE think that if R1 support this we can agree p11 as-is. Ericsson agrees.

P8a

- MTK think we don’t to decide.

P8bP9b

- Ericsson think these can be discussed in the offline email discussion.

* On P11 we wait for R1.
* On P7 and 8a there is no strong need for a desicion
* Two IEs: idleModeMeasurementsNR and idleModeMeasurementsEUTRA to be used in NR SIB1 to indicate whether the UE performs EUTRA and NR early measurements
* The cell quality derivation parameters (NR: *nrofSS-BlocksToAverage-r16* and *absThreshSS-BlocksConsolidation-r16*; LTE: *maxRS-IndexCellQual* and *threshRS-Index*) will be kept under the ssb-MeasConfig.
* A maximum of 8 cells per carrier can be reported for early measurements in LTE/NR rel-16.
* In LTE, a need code of “Need OR” to be used for the following IEs inside ssb-MeasConfig of MeasIdleCarrierListNR: measTimingConfig-r15, maxRS-IndexCellQual-r15, threshRS-Index-r15 and ssb-ToMeasure-r15.
* To use a new rel-16 IE (in 36.331) to enable the reporting of up to 8 EUTRA carriers in early measurement results
* Confirm the use of the new rel-16 IE *SCellToAddModList* IE (included in latest 36.331 DCCA CR) for SCell addition/modification in *RRCConnectionResume.*
* The *sPCellCommonConfig* for the PSCell is saved as part of the UE AS Inactive AS context.

ASN.1 Issues & RRC Corrections

R2-2003789 Feature summary for DCCA RRC open issues Ericsson discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

P1

- Huawei think the presence condition for TDm pattern is wrong. Need codes should be same as for reconfiguration. Nokia think we shold not remove the condtion completely.

P2

- Nokia think we should have shorter names.

* Add *p-maxEUTRA, p-maxUE-FR1,* and *tdm-patternConfig* in the *RRCConnectionResume* message. We allow the network to release these configurations when the UE is resumed without SCG. TBD if need codes is “Need OR” etc
* Field descriptions of harq-ACK-SpatialBundlingPUCCH, harq-ACK-SpatialBundlingPUSCH, harq-ACK-SpatialBundlingPUCCH-secondaryPUCCHgroup, and harq-ACK-SpatialBundlingPUSCH-secondaryPUCCHgroup to be updated as shown above to clarify the spatial bundling for the primary and secondary PUCCH can be disabled/enabled independently.

R2-2003381 CR for 36.331 for CA/DC Enhancements Ericsson CR Rel-16 36.331 16.0.0 4260 - F LTE\_NR\_DC\_CA\_enh-Core Late

R2-2003382 CR for 38.331 on CA/DC Enhancements Ericsson CR Rel-16 38.331 16.0.0 1557 - F LTE\_NR\_DC\_CA\_enh-Core Late

DCCA-H01 – More parameter to Resume

R2-2003659 [Coordinated][DCCA-H01] Adding p-MaxEUTRA, p-MaxUE-FR1, tdm-PatternConfig in RRCConnectionResume message Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core Revised

R2-2003660 [Coordinated][DCCA-H01] Draft CR for adding p-maxEUTRA, p-maxUE-FR1, tdm-patternConfig in RRCConnectionResume message Huawei, HiSilicon draftCR Rel-16 36.331 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core Revised

R2-2003760 [Coordinated][DCCA-H01] Adding p-MaxEUTRA, p-MaxUE-FR1, tdm-PatternConfig in RRCConnectionResume message Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core R2-2003659

R2-2003761 [Coordinated][DCCA-H01] Draft CR for adding p-maxEUTRA, p-maxUE-FR1, tdm-patternConfig in RRCConnectionResume message Huawei, HiSilicon draftCR Rel-16 36.331 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core R2-2003660

DCCA-H03 - HARQ parameters for PUCCH cell

R2-2003661 [Coordinated][DCCA-H03] Correction on HARQ parameters configured for secondary PUCCH cell group Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core Revised

R2-2003662 [Coordinated][DCCA-H03] Draft CR on HARQ parameters configured for secondary PUCCH cell group in TS 38.331 Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core Revised

R2-2003762 [Coordinated][DCCA-H03] Correction on HARQ parameters configured for secondary PUCCH cell group Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core R2-2003661

R2-2003763 [Coordinated][DCCA-H03] Draft CR on HARQ parameters configured for secondary PUCCH cell group in TS 38.331 Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core R2-2003662

**Others**

R2-2003718 Misc. ASN.1 corrections to 36.331 for eDCCA Huawei, HiSilicon draftCR Rel-16 36.331 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core Late

R2-2003719 Misc. ASN.1 corrections to 38.331 for eDCCA Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core Late

- hw6, same as Z311, proposal not a condition as “reconfig w sync” is needed. Ericsson indicate that this is a condition in current CRs. Ericsson think that also Eutra case need to be captured in this case. ZTE think a condition to parent field is better. On the contents, if needed it could be covered by field description. Ericsson think that would be messy, either ZTE or Huawei way would be good. ZTE think we cannot describe all of this in a Field descr.

- Nokia think that in such case we should have conditions for reconfig with synch. Ericsson think the condition is already there. Huawei think not.

- Samsung think that we need conditions for the IEs to be included, in this case two places? Huawei think there are several levels child-parent ..

- Intel think we need to reevaluate this and think more about guidelines.

* Hw6 / Z311 Offline, this specific issue in DCCA email discussion, general guidline in a separate discussion (011)

### 6.10.2 UE capabilities

Please see general instructions

Summary if needed by Huawei

* [AT109bis-e][033][DCCA] UE capabilities (Huawei)

Scope: Treat topics in 6.10.2, based on R2-2003707 and comments. Discussion on non-controversial issues/proposals that might not need to be treated on-line can start immediately. Others can start after on-line session.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC (can be extended). Way forward for issues that cannot be resolved at this meeting.

Part 2: Running CRs capturing agreements from this meeting.

Summary

R2-2003707 Summary for UE capabilities Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core Late

P4

- Ericsson wonder if there is inconsistency as we have tied other capabilities. Nokia also have some doubts. MTK have not seen any tie, and agree with Huawei that it is a separate feature and support P4. QC as well. Vivo as well. Intel as well.

- Huawei think that the validity area is a very specific feature,

- intel think we should keep all Rel-16 features optional.

P5

- Nokia then think this is just for IODT

- ZTE wonders why we use CA in the name of the first field as this can be for DC. Huawei agrees this can be changed. MTK agrees the naming is wrong and think the two capabilities is for different deplyments and they should be separate. QC agrees.

- Apple explain that ca is used for intra LTE ..

- Apple and Samsung and LG support this

P7

- Nokia wonder what this means. Huawei think it means always delete

- Ericsson wonder if conditional would make sense that b is support if a is supported.

- QC think the caps shall be seprate/independent. MTK also support separate, but could consider conditional. Intel agrees with MTK. (both 7 and 9).

- Nokia can live with separate if it is conditional. Huawei think we can try that

Week 2 online

- Huawei point out that we should remove the “Discuss Whehter .. “, because it was agreed.

* Remove FFS1 in endc-IdleInactiveMeasurements-r16, i.e. a LTE UE that supports *endc-IdleInactiveMeasurements-r16* is not required to support *ca-IdleInactiveMeasurements-r16*.
* Remove FFS2 in endc-IdleInactiveMeasurements-r16, i.e. in LTE, endc-IdleInactiveMeasurements-r16 applies to LTE IDLE, INACTIVE, and RRC connection suspension states.
* In NR, UE capability for MCG RLF recovery via SCG does not distinguish between NR and E-UTRA SCG.
* LTE UE that supports idleInactiveValidityAreaList-r16 is not required to support ca-IdleModeValidityArea-r15 (i.e. remove the FFS).
* We will have 2 separate NR capabilities, ca-idle-inactive-MeasReport-r16 and nedc-idle-inactive-MeasReport-r1, to distinguish LTE and NR measurements (naming TBD)
* Split resumeWithSCells -r16 in two separate LTE capabilities:  
  a) not deleting stored MCG SCell configuration when initiating the resume procedure"  
  b) (re-)configuration of MCG SCells in the RRCConnectionResume message",

**Condition: if Ue support a the UE also must support b**

Other

R2-2002642 Remaining issues of UE capability of Rel-16 DCCA enhancement in TS 36.306 Qualcomm Incorporated, Samsung discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2002643 Remaining issues of UE capability of Rel-16 DCCA enhancement in TS 38.306 Qualcomm Incorporated, Samsung discussion LTE\_NR\_DC\_CA\_enh-Core

R2-2002769 Remaining issue on DCCA capability MediaTek Inc. discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2002892 Remaining Issues on UE Capability for DC/CA Enhancement vivo discussion

R2-2003276 Remaining issues for CA&DC UE capabilities Ericsson discussion

R2-2003708 UE capability for eDCCA RAN1 features Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

Moved from 6.10.1

R2-2003703 Introducing of UE capabilities for eDCCA Huawei, HiSilicon CR Rel-16 36.306 16.0.0 1757 - B LTE\_NR\_DC\_CA\_enh-Core Late

R2-2003704 Introduction of UE capabilities for eDCCA Huawei, HiSilicon CR Rel-16 38.306 16.0.0 0293 - B LTE\_NR\_DC\_CA\_enh-Core Late

R2-2003705 Introducing of UE capabilities for eDCCA Huawei, HiSilicon CR Rel-16 36.331 16.0.0 4283 - B LTE\_NR\_DC\_CA\_enh-Core Late

R2-2003706 Introducing of UE capabilities for eDCCA Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1580 - B LTE\_NR\_DC\_CA\_enh-Core Late

### 6.10.3 NR-NR Dual Connectivity

Summary if needed by Ericsson

* [AT109bis-e][034][DCCA] NR-NR DC (Huawei, Apple)

Scope: Treat topics in 6.10.3, Start immediately with R2-2003656 and R2-2003657. Wait for on-line discussion for others.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

Part 2: Reply LS on uplink power control for NR-NR Dual-Connectivity (Apple), Scope: attempt to converge sufficiently for a Reply LS to R1, CB on-line Week2.

LS in

Moved from 6.10.1

R2-2002517 LS on uplink power control for NR-NR Dual-Connectivity (R1-2001421; contact: Apple) RAN1 LS in Rel-16 LTE\_NR\_DC\_CA\_enh-Core To:RAN2

* Noted

DISCSSUSION

- Ericsson think there is a problem bec now MN do not need to read SN configuration. Ericsson thikn that in any case the power sharing can work in intra-vendor scenarios,

- Nokia think that large T\_offset is anyway a problem which would bring bad performance and should not have been asked. QC and Apple think R2 sholdn’t express any opinion.

- Apple think R1 are ok with that R2 design inter node message.

- Chair think we can : a) do nothing, b) design inter-node coord,

- QC think we should do b)

- vivo agree with QC, and think that in mansy cases MN can decode SN configuration.

- Huawei prefers a), and leave it to network implementation.

- CATT thikn we can tell R1 that this can work in intra-vendor scenario. Samsung think that anyway R1 will discuss again and we can wait. Intel agrees with Samsung.

- ZTE think there are problems also for intra vendor scenario and think we should discuss solutions.

Chair summary on Toffset: In the current standard, there is no explicit support for the R1 WA (MN is not required to read/understand SN configuration). There is some support among R2 companies to make an effort to specify new functions that might resolve this, but several companies don’t want to standardize anything. Several companies think that non-standard network implementation can support/enable the R1 WA. For now thre is not sufficient support among companies to take action in R2. Chair is not sure how mature this attitude is and suggest to wait. Possibly we send a Reply LS to R1 from Next meeting.

DISCUSSION 2, April 24

- Apple request to have offline to reply. QC support. Ericsson support to reply something to R1. Nokia agrees as well.

* Will attempt to send an LS (Apple)

R2-2004187 DRAFT LS reply on uplink power control for NR-NR Dual-Connectivity Apple LS out

- Nokia think the removed line need to be reinstated.

- Ericsson think we need to inform R1 that their assumption is not correct

- Ericsson think the R1 reason to send the LS to R2 is that their assumption may not be correct. Ericsson agrees with Nokia. Docomo agrees as well, R1 has wrong understanding, and docomo think R1 is not intending to ask R2 to do further work.

- Apple are ok to keep the removed line.

- Chair wonder what is the expectation of “RAN2 is still discussing the reply to RAN1 but has no consensus yet on introducing new inter-node signalling for T\_offset”. CATT think this need to be removed as we have not agrees to continue work. Huawei agree with CATT comments.

- QC think that if we keep it R1 will not revert their agreement.

- Chair suggest reinstate the removed line in the end.

* Reinstate the removed line in the LS
* With the above change the LS is approved in R2-2004196.

Proposal on the table to continue by email on introduction of/modification of inter-node signalling for this case.

- Chair: ok now it seems there are no objections.

* Progress by email to next meeting on introduction of/modification of inter-node signalling for this case.
* [Post109bis-e][DCCA] Uplink power control for NR-NR Dual-Connectivity (Apple)

Scope : introduction of/modification of inter-node signalling to support what is decribed in R2-2002517

Outcome : Report

Deadline : Next meeting

**Toffset**

R2-2002893 T\_offset determination for NR-DC dynamic power sharing vivo discussion

R2-2002894 Draft CR on T\_offset determination for NR-DC dynamic power sharing vivo draftCR Rel-16 38.331 16.0.0 LTE\_NR\_DC\_CA\_enh-Core

R2-2002895 Draft LS on T\_offset determination for NR-DC dynamic power sharing vivo LS out To:RAN1

R2-2003198 Discussion on Toffset for NR-DC power control Ericsson discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2002979 NR DC power control Nokia, Nokia Shanghai Bell discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2002980 Reply LS on uplink power control for NR-NR Dual-Connectivity Nokia, Nokia Shanghai Bell LS out Rel-16 LTE\_NR\_DC\_CA\_enh-Core To:RAN WG1

R2-2003655 Discussion on RAN2 impact for NR-DC Dynamic Power Sharing Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

**Async-CA and Power control in NR-DC**

R2-2003656 Support of NR-DC semi-static power control Alt1-2 in Async CA Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2003657 [Draft] LS on slot offset exchange for NR-DC power control Huawei, HiSilicon LS out Rel-16 LTE\_NR\_DC\_CA\_enh-Core To:RAN3

**Withdrawn**

R2-2002959 NR DC power control Nokia, Nokia Shanghai Bell discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core Withdrawn

R2-2002960 LS answer to RAN1 on NR DC UL PC Nokia, Nokia Shanghai Bell LS out Rel-16 LTE\_NR\_DC\_CA\_enh-Core To:RAN WG1 Withdrawn

### 6.10.4 Early measurement reporting

Early measurement reporting for MR-DC, NR-DC, and CA in IDLE, INACTIVE.

Summary if needed by Ericsson

* [AT109bis-e][035][DCCA] Early Measurement Reporting (Ericsson)

Contents merged with [032]

CANCELLED

**Summary**

R2-2003790 Feature summary for early measurements Ericsson discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

Other

R2-2003384 Early measurement configuration in UE context retrieval Ericsson, Qualcomm Incorporated, LG Electronics Inc., CATT, OPPO, AT&T, Vodafone, Telecom Italia S.p.A, Intel Corporation, InterDigital Inc. discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2003385 Granular reporting of early measurement results Ericsson, MediaTek Inc., ZTE Corporation, LG Electronics Inc., Vivo, AT&T, Vodafone, InterDigital Inc., Telecom Italia S.p.A discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2002644 Remaining issues of NR early measurements Qualcomm Incorporated discussion LTE\_NR\_DC\_CA\_enh-Core

R2-2003395 Progressing some unresolved early measurement reporting issues Samsung Telecommunications discussion Rel-16 Late

R2-2002701 Remaining issues of early measurement ZTE Corporation, Sanechips discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

**ASN.1 issues & RRC corrections**

R2-2002675 [RIL402]Introduction of secondary SMTC for early measurement configuration OPPO draftCR Rel-16 38.331 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core

R2-2003220 Consideration on conditions for cells to be reported LG Electronics Inc. discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2003221 Need codes for Ies in ssb-MeasConfig in NR SIB11 LG Electronics Inc. discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2003200 Reporting early measurements to SN in INM Ericsson discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

**Withdrawn**

R2-2003217 Consideration on conditions for cells to be reported LG Electronics Inc. discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core Withdrawn

R2-2003218 Need codes for Ies in ssb-MeasConfig in NR SIB11 LG Electronics Inc. discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core Withdrawn

### 6.10.5 Fast SCell activation

Solutions for fast SCell activation including 'dormancy' like behaviour, provision of temporary RS resources at SCell activation, etc.

Summary by Oppo

* [AT109bis-e][036][DCCA] Fast Scell Activation (OPPO)

Scope: Treat general and RRC topics in 6.10.5, based on R2-2003770 and comments. Can start discussion on non-controversial proposals immediately, if any. Wait for on-line discussion for others.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

R2-2004122 Email report of [AT109bis-e][036][DCCA] Fast SCell Activation (OPPO) OPPO discussion

DISCSUSSION April 24

P1/P2

- on P1/P2 Nokia are ok, but for P2 the wording is misleading as the TS already handles this, the dormancy switch didn’t change the UL bwp. QC agrees with Nokia, suggest to just say that UE stay with last UL BWP.

- ZTE are ok with P1. For P2, for TDD there is a switch also for UL. QC think that for TDD there is no change needed.

- MTK are ok to use the old method, as long as there is no risk of desynch between UE and network.

- Samsung wonder if we can really assume no change, as we define UL behaviour at DL BWP switch, and think we need behaviour also to resume UL. Nokia think this is already in the Spec/CR. QC agrees, this is in the MAC CR.

- Futurewei also support P2.

P3

- Ericsson think this involves more change and wonder if this is needed. Intel also believe that this brings some change, and if we go with this, we need new trigger for PHR, but would be ok either way.

- OPPO think that is we exclude an SCell we need to consult R1.

- Futurewei think we should check with R1.

- Samsung agrees with Intel but also think P3 makes sense. Nokia agrees as well. LG agrees as well and think there is nothing to check with R1. MTK agrees.

- Vivo think we can agree and think we don’t need new trigger

P4

- Ericsson are ok but think that anyway need to check conditions carefully, and there may be more aspects to capture in the final TS. Nokia agrees.

- Intel wonder if reconfiguration of Scell in dormancy is special and need to be mentioned somehow.

- QC agrees with the first one.

- Oppo wonders if we can remove the SCell modification. ZTE think not, as we want to configure this at handover.

- ZTE wonder if this requires reconfiguration with sync. Intel think we don’t need to change R15 behaviour, no need for reconfig with sync.

P5/6/7

- OPPO think P6 option 1 is simple. Ericsson would like to think more on the details of the conditions p5 could be agreed. MTK think P5 can await R1 decision on first non dormant BWP. Futurewei agrees with mediatek.

- QC support P5

- Chair: Can think more about the details.

* RAN2 confirm that, for TDD, the first non-dormant UL BWP is the UL BWP with the same ID as the first non-dormant DL BWP (no change to today, wrt BWP switching).
* RAN2 confirm that UE do not switch UL BWP (for FDD) as a result of transition from dormancy to non-dormancy or vice versa (no change to today, wrt BWP switching).
* The activated SCell on which the active BWP is dormant BWP should not be included in PHR report. FFS whether we need addition/modification to PHR trigger.
* For dormant BWP configuration :

**Dormant BWP configuration should be based on condition that UE is configured with at least two BWPs for an SCell.**

**Dormant BWP configuration can be configured in SCell addition and SCell modification procedure.**

Summary

R2-2003770 Summary of fast SCell activation OPPO discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

Other

R2-2002646 Remaining issues of dormant BWP Qualcomm Incorporated discussion LTE\_NR\_DC\_CA\_enh-Core

R2-2002822 CR to 38.331 on on supporting implicit BFD-RS configuration in dormant BWP Qualcomm Incorporated draftCR Rel-16 38.331 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core

R2-2002907 Beam failure detection for dormancy Samsung discussion LTE\_NR\_DC\_CA\_enh

R2-2003033 Consideration on configuration of BFD-RS LG Electronics Inc. discussion LTE\_NR\_DC\_CA\_enh-Core

R2-2002673 Discussion on implicit BFD-RS on dormant BWP OPPO discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2002801 BFD-RS Configuration on Dormant BWP Apple discussion NR\_Mob\_enh-Core

R2-2002702 Remaining issues of fast SCell activation ZTE Corporation, Sanechips discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2002768 Discussion on first non-dormant UL BWP MediaTek Inc. discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2002899 UL BWP behavior for dormancy Samsung discussion LTE\_NR\_DC\_CA\_enh

**ASN.1 issues & corrections RRC**

R2-2003313 PDSCH-Config for dormant BWP LG Electronics Inc. discussion Rel-16

R2-2002983 RRC Dormant cleanup Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.0.0 1537 - F LTE\_NR\_DC\_CA\_enh-Core

R2-2002789 Correction on the Configuration of sCellState [C101] [C102] CATT draftCR Rel-16 38.331 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core Late

**Corrections 38.321 MAC**

* [AT109bis-e][037][DCCA] MAC (OPPO)

Scope: Treat MAC proposals for DCCA

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

Part 2: Agreeable CR

CLOSED

R2-2004183 Corrections on dormant BWP operation OPPO, Nokia, Ericsson, Huawei CR Rel-16 38.321 16.0.0 0733 1 F LTE\_NR\_DC\_CA\_enh-Core

* Endorsed (might update further next meeting)

R2-2002674 Corrections on PHR generation due to dormant BWP OPPO draftCR Rel-16 38.321 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core

R2-2002982 MAC Dormant cleanup Nokia, Nokia Shanghai Bell CR Rel-16 38.321 16.0.0 0715 - F LTE\_NR\_DC\_CA\_enh-Core

R2-2003658 Corrections on MAC spec for direct SCell activation and dormant BWP Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2003277 Correction to SCell activation procedures Ericsson draftCR Rel-16 38.331 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core

**38.300 Correction – not Treated**

This Stage-2 correction is postponed

R2-2002981 Stage-2 dormant cleanup Nokia, Nokia Shanghai Bell CR Rel-16 38.300 16.1.0 0213 - F LTE\_NR\_DC\_CA\_enh-Core

**SRS in dormant – Not treated**

R2-2002750 Further discussion on Scell domancy Futurewei discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

**Withdrawn**

R2-2002961 On early measurements related to SCG CA Nokia, Nokia Shanghai Bell CR Rel-16 38.300 16.1.0 0212 - D LTE\_NR\_DC\_CA\_enh-Core Withdrawn

R2-2002962 Remaining details of MCG failure recovery Nokia, Nokia Shanghai Bell CR Rel-16 38.321 16.0.0 0713 - F LTE\_NR\_DC\_CA\_enh-Core Withdrawn

R2-2002963 BFD on Dormant Scell Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.0.0 1535 - F LTE\_NR\_DC\_CA\_enh-Core Withdrawn

R2-2002906 Beam failure detection for dormancy Samsung discussion Withdrawn

### 6.10.6 MCG SCell and SCG Configuration with RRC Resume

Support of CA/DC configuration with RRC resume.

Summary by ZTE

* [AT109bis-e][038][DCCA] MCG SCell and SCG Configuration with RRC Resume (ZTE)

Scope: Treat topics in 6.10.6, based on R2-2003812 and comments. Can start discussion on non-controversial proposals immediately, if any. Wait for on-line discussion for contriversial proposal.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

R2-2004129 [AT109bis-e][038][DCCA] MCG SCell and SCG configuration with RRC Resume ZTE Corporation discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

DISCUSSION

P1/2/3

- P1 LG wonder if the naming is correct.

- P2 Ericsson indicate that for LTE the description of UE context is not detailed.

- P3 LG and IDT think we will have SCG failure handling anyway

P4

- Ericsson think that this is applicable to connectivity to 5G core network, but for R16 there is no need for conditions as Resume can be encrypted. Ericsson think this is simple. ZTE support to support EN-DC. CATT support. Vivo support.

- Nokia are a bit hesitant to support LTE connected to EPC, but are open. It is a bit late

- Intel are ok if Ericsson’s analysis is correct. Huawei and Samsung are also ok if that is the case. Should be further checked. Chair suggest conditional agreement.

* Send LS to RAN3, informing on RAN2’s agreement (LG)
  + - The *sPCellConfigCommon* for the PSCell is saved as part of the UE AS Inactive AS context.
* Update the previous RAN2 agreement as below:
  + - For *restoreSCG* upon RRC resume, Network shall always include *secondaryCellGroup* (with at least reconfigurationWithSync of NR SCG, or mobilityControlInfoSCG of LTE SCG) together with *restoreSCG*.
* RAN2 confirm not to introduce mechanism for checking the validity of stored PSCell in Rel-16.
* Under the assumption that encryption for this message is possible now and no other functional changes are needed, LTE *RRCConnectionResume* message can be used to restore NR SCG in case of EN-DC (Note ngEN-DC with 5GCN was already agreed/assumed).

R2-2004242 LS on updated Inactive AS context RAN2 LS out

* [038] approved.

**Summary**

R2-2003812 Summary of MCG SCell and SCG Configuration with RRC Resume ZTE Corporation discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

**Other**

R2-2002699 Remaining issues of restoreSCG in RRC resume ZTE Corporation, Sanechips discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2003128 Remaining issue on stored SCG context LG Electronics Inc. discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2003146 Draft LS to RAN3 on updated Inactive AS context LG Electronics Inc. LS out Rel-16 To:RAN3

R2-2003243 Handling the SCG Configuration in RRC Resume InterDigital, Ericsson, LG, OPPO, KT Corp discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core R2-2000553

R2-2003241 Draft 36.331 CR for Handling SCG Configuration in Resume InterDigital, Ericsson, LG, OPPO draftCR Rel-16 36.331 16.0.0 LTE\_NR\_DC\_CA\_enh-Core R2-2000551

R2-2003242 Draft 38.331 CR for Handling SCG Configuration in Resume InterDigital, Ericsson, LG, OPPO draftCR Rel-16 38.331 16.0.0 LTE\_NR\_DC\_CA\_enh-Core R2-2000552

### 6.10.7 Fast MCG link Recovery

Including outcome of the email discussion [Post109e#27][DCCA] Fast MCG recovery (Ericsson). Only the email discussion is planned to be treated under this AI.

* [AT109bis-e][039][DCCA] Fast MCG Link Recovery (Ericsson)

Scope: Treat topics in 6.10.6, based on R2-2003812 and ASN.1 issues and RRC corrections. Can start discussion on non-controversial proposals immediately, if any. Wait for on-line discussion for controversial proposal.

Part 1: Determine which issues that need resolution, find agreeable proposals. Deadline: April 24 0700 UTC

R2-2003839 [AT109bis-e][039][DCCA] Fast MCG Link Recovery Ericsson

DISCSUSSION

Only P4P7 now rest next week

P4

- QC think almost all companies have the same understanding, and it is just based on whether SRB3 is supported for the scenario.

- Nokia think we should keep it simple, we don’t need need to list the details e.g. “via SRB3, when SRB3 is supported”, Vivo agrees with Nokia.

- Chair: It seems the desire is to Describe the usage of SRBs in a general way, not specific to scenarios.

P7

- Nokia prefers a. MTK agrees but think that both options can work. QC agrees. Vivo too

- ZTE think that the RLC failure may apply only to SCell and not the PSCell and the UE can then send this by PSCell. LG support b. Huawei think it is easy to support b, but think this is not so important. Oppo think current behaviour is b.

- Ericsson think both options are ok. Futurewei slightly prefer b.

* For the case of UE behaviour when SCG RLC failure is detected, in case SRB3 is not configured, and MCG transmission is suspended, no particular enhancement is needed (both option a and b are ok). TS should be kept simple.

Incoming Email discussion

R2-2003199 Summary of [Post109e#27][DCCA] Fast MCG recovery Ericsson discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

Other

R2-2002647 Remaining issues in Fast MCG Recovery Qualcomm Incorporated discussion LTE\_NR\_DC\_CA\_enh-Core

R2-2002700 Support of Inter-RAT handover upon MCG failure recovery ZTE Corporation, Sanechips discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2002992 CR37340 on fast MCG recovery support vivo CR Rel-16 37.340 16.1.0 0191 - B LTE\_NR\_DC\_CA\_enh-Core

**ASN.1 issues and RRC Corrections**

R2-2003425 [Z301] Correcction for SCG RLC failure during fast MCG recovery ZTE Corporation, Sanechips discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

R2-2002790 Correction on the Configuration of T316 [C103] [C104] CATT draftCR Rel-16 38.331 16.0.0 F LTE\_NR\_DC\_CA\_enh-Core Late

R2-2002984 Erroneous instances of “the procedure ends” impacting reception over SRB3 Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.0.0 1538 - F LTE\_NR\_DC\_CA\_enh-Core

**Withdrawn**

R2-2002964 BFR on Dormant Scell Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.9.0 1536 - F LTE\_NR\_DC\_CA\_enh-Core Withdrawn

### 6.10.8 Other

R2-2003709 CG fast recovery via alternative UL Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

## 6.11 UE Power Saving in NR

(NR\_UE\_pow\_sav-Core; leading WG: RAN1; REL-16; started: Mar 19; target; Jun 20; WID: [RP-200494](file:///C:\Data\3GPP\TSGR\TSGR_84\docs\RP-191607.zip); SR: RP-200237, See also guidence in RP-192326). Documents in this agenda item will be handled in a break out session. NOTE: "SCell dormancy" like behaviour will be discussed in MR-DC WI.

Time budget: 1 TU

Tdoc Limitation: 2

### 6.11.1 Organisational

Including incoming LSs, running TS, rapporteur inputs, etc

NOTE: any stage 3 identified issues with MIMO configurations should be provided to 38.331 rapporteur (Mediatek)

Contributions in this AI are reserved for WI rapporteur inputs and/or spec rapporteur inputs and do not count towards the tdoc limits. Including outcome of email [Post109e#42][PowSav] UE capabilities (Intel)

No contributions expected for UE capabilities. Please provide your input to the email discussion. Intel is expected to produce first draft of 38.304

R2-2002601 Report of email discussion [Post109e#42][PowSav] UE capabilities Intel Corporation discussion Rel-16 NR\_UE\_pow\_sav

R2-2002602 UE capabilities for Rel-16 Power Saving (PWS) WI Intel Corporation draftCR Rel-16 38.306 16.0.0 B NR\_UE\_pow\_sav

R2-2002842 SRB3 for reporting UAI for power saving OPPO CR Rel-16 37.340 16.1.0 0189 - F NR\_UE\_pow\_sav-Core

R2-2003125 CR for 38.331 for Power Savings MediaTek Inc. CR Rel-16 38.331 16.0.0 1540 - C NR\_UE\_pow\_sav-Core Late

R2-2003126 CR for 36.331 for Power Savings MediaTek Inc. CR Rel-16 36.331 16.0.0 4245 - B NR\_UE\_pow\_sav-Core Late

### 6.11.2 PDCCH-based power saving signals/channel Additional stage-3 RAN2 aspects

Including out of [Post109e#41][PowSav] DCP open issues (InterDigital, Huawei)

Contributions related to issues addressed by the email discussions should be avoided and are discouraged for this AI.

All identified critical open issues should be provided to the rapporteur via email discussion Post109e#41 and new contributions on those topics are discouraged. Contributions should be reserved for more complicated and critical issues.

No individual company CRs should be submitted

R2-2002797 PDCCH-WUS Mechanism Apple discussion NR\_UE\_pow\_sav-Core

R2-2002839 Remaining issues of DCP impact on SCell dormancy OPPO discussion Rel-16 NR\_UE\_pow\_sav-Core

R2-2002866 Remaining issues for DCP vivo discussion Rel-16 FS\_NR\_UE\_pow\_sav

R2-2002930 Correction on RAR and DCP monitoring Nokia, Nokia Shanghai Bell draftCR Rel-16 38.321 16.0.0 F NR\_UE\_pow\_sav-Core

R2-2003032 Remaining issue on DCP monitoring within RAR window LG Electronics Inc. discussion NR\_UE\_pow\_sav-Core

R2-2003129 Miscellaneous corrections to 38.321 for Rel-16 UE power saving Huawei, HiSilicon CR Rel-16 38.321 16.0.0 0719 - F NR\_UE\_pow\_sav-Core Late

R2-2003288 Open issues UE capability, DCP, UE assistance and RRM relaxation Ericsson discussion Rel-16 NR\_newRAT-Core

R2-2003378 Summary of [Post109e#41] [PowSav] DCP open issues – Phase 1 InterDigital discussion Rel-16 NR\_UE\_pow\_sav-Core Late

R2-2003379 Report of [Post109e#41] [PowSav] DCP open issues InterDigital discussion Rel-16 NR\_UE\_pow\_sav-Core Late

R2-2003562 PDCCH-based power saving signal/channel Samsung discussion NR\_UE\_pow\_sav-Core

### 6.11.3 UE assistance and RRC

Including outcome of [Post109e#43][PowSav] UE Assistance and RRC open issues (Mediatek)

Contributions related to issues addressed by the email discussions should be avoided and are discouraged for this AI.

All identified critical open issues should be provided to the rapporteur via email discussion Post109e#43 and new contributions on those topics are discouraged. Contributions should be reserved for more complicated.

No individual company CRs should be submitted

R2-2002670 Power Saving UE assistance information Sony discussion Rel-16 NR\_UE\_pow\_sav-Core

R2-2002798 Value Range for UE Assistance Information Apple discussion NR\_UE\_pow\_sav-Core

R2-2002838 Remaining issues on implicit SCG release OPPO discussion Rel-16 NR\_UE\_pow\_sav-Core

R2-2003127 Summary of [Post109e#43][PowSav] UE Assistance and RRC open issues MediaTek Inc. discussion Rel-16 NR\_UE\_pow\_sav-Core Late

R2-2003229 Adopting general UE assistance reporting framework to UE power saving Samsung Telecommunications discussion Rel-16

R2-2003289 UE assistance for connection release Ericsson, ZTE, Deutsche Telekom discussion Rel-16 NR\_newRAT-Core

R2-2003387 Adopting general UE assistance reporting framework to UE power saving Samsung Telecommunications discussion Rel-16 Late Withdrawn

R2-2003472 Discussion on clarification for max MIMO layer and antenna port Huawei, HiSilicon discussion Rel-16 NR\_UE\_pow\_sav-Core

R2-2003473 TP for clarification for max MIMO layer and antenna port Huawei, HiSilicon discussion Rel-16 NR\_UE\_pow\_sav-Core

### 6.11.6 RRM measurement relaxation

Including out of [Post109e#44][PowSav] RRM open issues (CATT, Vivo)

Contributions related to issues addressed by the email discussions should be avoided and are discouraged for this AI.

All identified critical open issues should be provided to the rapporteur via email discussion Post109e#44 and new contributions on those topics are discouraged. Contributions should be reserved for more complicated issued.

No individual company CRs should be submitted

R2-2002665 UE power saving for inter frequency measurements Sony discussion Rel-16 NR\_UE\_pow\_sav-Core R2-2000827

R2-2002735 Configurations for RRM Measurement Relaxation MediaTek Inc. discussion

R2-2002791 Report of [Post109e#44][PowSav] RRM open issues CATT discussion Rel-16 NR\_UE\_pow\_sav-Core

R2-2002865 CR on 38.304 for UE Power saving in NR vivo CR Rel-16 38.304 16.0.0 0152 - B FS\_NR\_UE\_pow\_sav

R2-2002867 Configurations for RRM Measurement Relaxation vivo discussion Rel-16 FS\_NR\_UE\_pow\_sav

R2-2002950 Correction of SI update of relaxed measurement parameters Nokia, Nokia Shanghai Bell, Ericsson draftCR Rel-16 38.304 16.0.0 F NR\_UE\_pow\_sav-Core

R2-2003216 EMR issue on relaxed measurement LG Electronics Inc. discussion Rel-16 NR\_UE\_pow\_sav-Core Withdrawn

R2-2003219 EMR issue on relaxed measurement LG Electronics Inc. discussion Rel-16 NR\_UE\_pow\_sav-Core

## 6.12 SON/MDT support for NR

(NR\_SON\_MDT-Core; leading WG: RAN3; REL-16; started: Jun 19; target; Jun 20; WID: [RP-191](file:///C:\Data\3GPP\TSGR\TSGR_84\docs\RP-191594.zip)776; SR: RP-200489). Documents in this agenda item will be handled in a break out session

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

R2-2003324 Draft reply LS on the status update of the SON support for NR works Intel Corporation LS out Rel-16 NR\_SON\_MDT-Core To:SA5 Cc:RAN3

### 6.12.1 General

Including LSs, work plan, rapporteur inputs, running TS

R2-2002521 Reply LS on QoS monitoring for URLLC (R3-201372; contact: Intel) RAN3 LS in Rel-16 NR\_SON\_MDT To:SA5, SA2 Cc:RAN2, SA1, CT4

R2-2002524 LS on removal of Management Based MDT Allowed IE for NR (R3-201437; contact: Qualcomm) RAN3 LS in Rel-16 NR\_SON\_MDT To:RAN2, SA5

R2-2002544 Reply to LS to SA5 on trace related configurations for NR MDT (S5-201424; contact: Ericsson) SA5 LS in Rel-17 To:RAN2

R2-2002545 LS on the status update of the SON support for NR works (S5-201525; contact: Intel) SA5 LS in Rel-16 To:RAN2, RAN3

R2-2002896 Running CR to 38.306 for NR\_SON\_MDT vivo, CMCC draftCR Rel-16 38.306 16.0.0 NR\_SON\_MDT-Core

R2-2003487 draft TS 38.314 CMCC draft TS Rel-16 38.314 0.1.0 NR\_SON\_MDT-Core

R2-2003488 UE Feature List for Rel-16 SON/MDT WI CMCC discussion Rel-16 NR\_SON\_MDT-Core

R2-2003797 Summary on ASN1 RIL for MDT and SON Huawei, HiSilicon discussion Rel-16 NR\_SON\_MDT-Core

### 6.12.2 MDT

The procedure, signaling and corresponding measurement quantities for MDT. Only Open issues and Corrections

R2-2002555 Clarification of MDT Initiation in NR and NG-RAN Qualcomm Incorporated, Nokia CR Rel-16 37.320 16.0.0 0078 - F NR\_SON\_MDT-Core

R2-2002606 Remaining Issues of UE Location Information Qualcomm Incorporated discussion Rel-16

R2-2002731 [C201 C203 C204] Discussion on Location Related Measurement Collection in MDT CATT discussion Rel-16 NR\_SON\_MDT-Core

R2-2002732 [C201 C203 C204] Corrections on Location Related Measurement Collection in MDT CATT draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2002733 [C253 C256 C257] Discussion for CEF Report CATT discussion Rel-16 NR\_SON\_MDT-Core

R2-2002747 [C253 C256 C257] Corrections for CEF Report CATT draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2002826 Remaining issues for NR MDT: [S461] [S462] [S463] [S464] [S465] [S466] [S467] [S468] [S469] [S470] [S471] [S474] Samsung discussion NR\_SON\_MDT-Core

R2-2002925 CR to 37320 on MDT configuration ZTE Corporation, Sanechips CR Rel-16 37.320 16.0.0 0080 - F NR\_SON\_MDT-Core Withdrawn

R2-2003074 Open issues associated of MDT Ericsson discussion

R2-2003076 [E002] On mobilityState reporting Ericsson draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003084 [E010] On stopping T330 upon going to idle Ericsson draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003085 [E012] On logging TAC in CEF report Ericsson draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003086 [E014] On WLAN, Bluetooth and sensor information transfer from LoggedMeasurementConfgiuration to VarLogMeasConfig Ericsson draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003087 [E018] On procedural text correction for any cell selection state exiting in outOfCoverage event driven logged MDT Ericsson draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003088 [E021] On any-cell selection state related logging in logged MDT Ericsson draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003091 [E026] On creation of MeasQuantityResultsLogged-r16 Ericsson draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003093 [E041] On changing serving cell CGI to optional in logged MDT report Ericsson draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003104 CR to 37.320 on MDT initiation ZTE Corporation, Sanechips CR Rel-16 37.320 16.0.0 0081 - F NR\_SON\_MDT-Core

R2-2003117 [C255] Reporting Logged MDT Result in SRB2 without DRB Establishment CATT draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003118 [C265] Corrections on Recording the UE History Information CATT draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003120 Introduction of TAC Information in CEF Report CATT draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003121 Miscellaneous corrections for 37.320 CATT draftCR Rel-16 37.320 16.0.0 F NR\_SON\_MDT-Core

R2-2003158 Resolving MDT stage 2 open issues Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_SON\_MDT

R2-2003159 Miscellaneous corrections Nokia (Rapporteur) CR Rel-16 37.320 16.0.0 0082 - F NR\_SON\_MDT

R2-2003160 N011, N012, N013, N014 on PLMN Id association with cell Id Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_SON\_MDT

R2-2003161 N015 on referencing TS23.122 Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_SON\_MDT

R2-2003499 Removal of Management Based MDT Allowed IE for NR MDT CMCC discussion Rel-16 NR\_SON\_MDT-Core

R2-2003500 CR for Removal of Management Based MDT Allowed IE for NR MDT CMCC CR Rel-16 37.320 16.0.0 0083 - F NR\_SON\_MDT-Core

R2-2003574 Minor issues on MDT Huawei, HiSilicon discussion Rel-16 NR\_SON\_MDT-Core

R2-2003798 Summary on MDT Huawei, HiSilicon discussion Rel-16 NR\_SON\_MDT-Core

### 6.12.3 L2 measurements

Definition of L2 measurements in TS 38.314.

No new measureemnts will be introduced to TS38.314 this meeting. Only Open issues and Corrections

R2-2002751 Discussion on metric of number of active UEs in RRC connected NTT DOCOMO INC. discussion

R2-2002897 Remaining issues on L2 measurement vivo discussion

R2-2002898 CR37320 for M5 ~ M7 vivo CR Rel-16 37.320 16.0.0 0079 - B NR\_SON\_MDT-Core

R2-2003073 Open issues of L2 measurements Ericsson discussion

R2-2003165 Correction of DL packet delay Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_SON\_MDT

R2-2003486 Summary of AI 6.12.3 L2 measurements CMCC (Summary Rapporteur) discussion Rel-16 NR\_SON\_MDT-Core Late

R2-2003489 Miscellaneous corrections for draft TS 38.314 CMCC discussion Rel-16 NR\_SON\_MDT-Core

R2-2003575 Minor issues on L2M Huawei, HiSilicon discussion Rel-16 NR\_SON\_MDT-Core

### 6.12.4 SON

UE reporting necessary to enhance the network configuration for MRO, MLB and RACH optimization

Only Open issues and Corrections

R2-2002562 Corrections to RA Report\_S480\_S481\_S482\_S483\_S484\_S485 Samsung Electronics Co., Ltd discussion Rel-16 NR\_SON\_MDT-Core

R2-2002720 Remaining Aspects on UE History Information Mediatek Inc. discussion

R2-2002760 Discussion on terminology of handover failure in rel-16 SON MDT NTT DOCOMO INC. discussion

R2-2002761 Discussion on UE capability for location reporting in SCG failure NTT DOCOMO INC. discussion

R2-2002827 Remaining issues for NR SON: [S472] [S473] [S475] [S476] [S477] [S478] [S479] Samsung discussion NR\_SON\_MDT-Core

R2-2002923 [Z152] Correction to RACH report and RLF report ZTE Corporation, Sanechips discussion Rel-16 NR\_SON\_MDT-Core

R2-2002924 Enhancement on RLF report for MRO ZTE Corporation, Sanechips discussion Rel-16 NR\_SON\_MDT-Core

R2-2003075 Open issues associated to SON functions Ericsson discussion

R2-2003077 [E007] On including TAC information for re-establishment cell in RLF report Ericsson draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003080 [E009] On LTE previousPCell inclusion in NR RLFReport Ericsson draftCR Rel-16 38.331 16.0.0 B NR\_SON\_MDT-Core

R2-2003081 [E009] On NR previousPCell inclusion in LTE RLFReport Ericsson draftCR Rel-16 36.331 16.0.0 B NR\_SON\_MDT-Core

R2-2003082 [E009] On UE capabilities for inter-RAT MRO related RLF reporting Ericsson draftCR Rel-16 36.306 16.0.0 B NR\_SON\_MDT-Core

R2-2003083 [E009][E026] On UE capabilities for cross RAT RLF reporting and inter-RAT MRO related RLF reporting Ericsson draftCR Rel-16 38.306 16.0.0 B NR\_SON\_MDT-Core

R2-2003089 [E023] On including beamFailureRecoveryFailure in SCG failure information messages Ericsson draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003090 [E023] On including beamFailureRecoveryFailure in SCGFailureInformationNR message Ericsson draftCR Rel-16 36.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003092 [E028] On SON-MDT related UE capabilities addition Ericsson draftCR Rel-16 38.331 16.0.0 F NR\_SON\_MDT-Core

R2-2003119 Consideration on Adding the Re-connection Attempt Cell Identity CATT, CMCC discussion

=> Revised in R2-2003784

R2-2003784 Consideration on Adding the Re-connection Attempt Cell Identity CATT, CMCC discussion

R2-2003162 N016 on missing RA-report availability indicator Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_SON\_MDT

R2-2003163 N017 RA-report also for failed RA procedures Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_SON\_MDT

R2-2003164 N018 Actions upon successful completion of random-access procedure Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_SON\_MDT

R2-2003576 Minor issues on SON Huawei, HiSilicon discussion Rel-16 NR\_SON\_MDT-Core

R2-2003800 Summary of AI 6.12.4 SON Ericsson discussion Rel-16 NR\_SON\_MDT-Core

### 6.12.5 Others

## 6.13 2-step RACH for NR

(NR\_2step\_RACH-Core; leading WG: RAN1; REL-16; started: Dec 18; target; Mar 20; WID: [RP-](file:///C:\Data\3GPP\Extracts\RP-190711%20Revised%20work%20item%20proposal%202%20step%20RACH%20for%20NR.docx)200085; SR: RP-200488). Documents in this agenda item will be handled in a break out session

Time budget: 1 TU

Tdoc Limitation: 1

### 6.13.1 General

Running CRs, Incoming LSs, Contributions in this AI are restricted for WI rapporteur inputs and/or spec rapporteur inputs and do not count towards the tdoc limits.

All comments related to 38.300 should be given directly to Eswar rapporteur. ZTE will update CRs according to received comments offline

R2-2003009 4-step RA type description Nokia (rapporteur), Nokia Shanghai Bell, ZTE CR Rel-16 38.300 16.1.0 0214 - F NR\_2step\_RACH-Core Late

### 6.13.2 User plan aspects

A single CR will be produced by Rapporteur. No individual company CRs are expected. Comments should be given directly to rapporteur preferable. Contribution should be reserved for more complicated issued, but they should be critical issues

R2-2002585 Remaining Issues on Resource Selection in 2-setp RACH vivo discussion

R2-2002668 msgB-RNTI ambiguity for CFRA and CBRA of 2-Step RACH Sony discussion Rel-16 NR\_2step\_RACH-Core R2-2000833

R2-2002840 Remaining issues of 2-step RACH OPPO discussion Rel-16 NR\_2step\_RACH-Core Late

R2-2002965 Updates to MAC spec for 2-step RACH ZTE (CR editor), Nokia, Samsung, Vivo CR Rel-16 38.321 16.0.0 0714 - F NR\_2step\_RACH-Core, NR\_unlic-Core

R2-2003007 Discussion on remaining issues of 2-step RA Huawei, HiSilicon discussion Rel-16 NR\_2step\_RACH-Core

R2-2003356 Handling invalid POs for MsgA transmissions Ericsson discussion Rel-16 NR\_2step\_RACH-Core

R2-2003357 Change LCID to eLCID for Absolute Timing Advance Command Ericsson CR Rel-16 38.321 16.0.0 0722 - F NR\_2step\_RACH-Core

R2-2003362 Correction of Handling of invalid POs for MsgA transmissions Ericsson CR Rel-16 38.321 16.0.0 0725 - F NR\_2step\_RACH-Core

R2-2003666 Further clarifications on parameters for Random Access procedure LG Electronics discussion NR\_2step\_RACH-Core

### 6.13.3 RRC stage-3 related aspects

A single CR will be produced by Rapporteur. No individual company CRs are expected. Comments should be given directly to rapporteur preferable. Contribution should be reserved for more complicated issued, but they should be critical issues

R2-2002556 Issues - 2 step RA Samsung Electronics Co., Ltd discussion Rel-16 NR\_2step\_RACH-Core

R2-2002878 RAN2 related UE capability for 2-step RACH Intel Corporation discussion Rel-16 NR\_2step\_RACH-Core

R2-2003255 Remaining issue on 2-step CFRA Qualcomm Incorporated discussion Rel-16 NR\_2step\_RACH-Core

R2-2003649 Correction on 2-step RACH configurations in RRC ASUSTeK discussion Rel-16 38.331 NR\_2step\_RACH-Core

## 6.14 Single Radio Voice Call Continuity from 5G to 3G

(SRVCC\_NR\_to\_UMTS-Core; leading WG: RAN2; REL-16; started: Dec 18; target; Mar 20; WID: [RP-190713](file:///C:\Data\3GPP\archive\RAN\RAN%2383\Tdocs\RP-190713.zip); SR: RP-200436) Documents in this agenda item will be handled in a break out session

Tdoc Limitation: 1 tdoc

The Core part of this WI is 100% Only corrections.

### 6.14.1 Organisational

Including incoming LSs, rapporteur inputs, etc.

Contributions in this AI are reserved for WI rapporteur inputs and do not count towards the tdoc limits.

### 6.14.2 Corrections

Including contributions/TPs/DraftCRs on SRVCC-specific Class 3 ASN.1 review aspects, if any. For these, no individual company CRs should be submitted: please consult with the RRC CR rapporteur first ([tangxun@huawei.com](mailto:tangxun@huawei.com)).

## 6.15 Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR

(NR\_CLI\_RIM; leading WG: RAN1; REL-16; started: Dec 18; target; Jun 20; WID: [RP-191997](file:///C:\Data\3GPP\archive\RAN\RAN%2385\Tdocs\RP-191997.zip); SR: RP-200453) Documents in this agenda item will be handled in a break out session.

Tdoc Limitation: 1 tdoc

Apart from corrections, it's possible to contribute to sub agenda item 6.15.2 for the remaining open issues requiring feedback from other groups.

### 6.15.1 Organisational

Including incoming LSs, rapporteur inputs, etc.

Contributions in this AI are reserved for WI rapporteur inputs and do not count towards the tdoc limits.

R2-2002510 Reply LS on clarification of CLI resource configuration (R1-2001319; contact: Lenovo) RAN1 LS in Rel-16 NR\_CLI\_RIM-Core To:RAN2 Cc:RAN4

R2-2002511 LS on CLI measurement and reporting (R1-2001320; contact: LGE) RAN1 LS in Rel-16 NR\_CLI\_RIM-Core To:RAN4 Cc:RAN2

R2-2002528 Reply LS on CLI measurement capability (R4-2002221; contact: Huawei) RAN4 LS in Rel-16 NR\_CLI\_RIM-Core To:RAN2 Cc:RAN1

R2-2003365 CLI Featurre overview - Additional changes Nokia Solutions & Networks (I) CR Rel-16 38.300 16.1.0 0217 - D NR\_CLI\_RIM-Core

### 6.15.2 Remaining open issues

Including the open issues for which feedback has been requested to other groups.

Including contributions/TPs/DraftCRs on corrections and CLI-specific Class 3 ASN.1 review aspects, if any. For the latter (ASN.1 aspects), no individual company CRs should be submitted: please consult with the RRC CR rapporteur first ([sangwon7.kim@lge.com](mailto:sangwon7.kim@lge.com)).

R2-2002885 Additional frequency information for CLI measurements Samsung CR Rel-16 38.331 16.0.0 1531 - F NR\_CLI\_RIM

R2-2002909 Additional configuration for CLI resources LG Electronics Inc. discussion Rel-16

R2-2002911 CR on additional configuration for CLI resources LG Electronics Inc. CR Rel-16 38.331 16.0.0 1533 - F NR\_CLI\_RIM

R2-2003380 Remaining issues for RIM/CLI Ericsson discussion Rel-16 NR\_CLI\_RIM

## 6.16 Enhancements on MIMO for NR

(NR\_eMIMO-Core; leading WG: RAN1; REL-16; started: Jun 18; target; June 20; WID: [RP-200474](file:///C:\Data\3GPP\archive\RAN\RAN%2385\Tdocs\RP-192271.zip); SR: RP-200473). Documents in this agenda item will be handled in a break out session.

Tdoc Limitation: 2 tdocs

It's possible to contribute to all sub agenda items, to address the remaining open issues.

### 6.16.1 Organisational

Including incoming LSs, rapporteur inputs, etc.

Contributions in this AI are reserved for WI rapporteur inputs and do not count towards the tdoc limits.

R2-2002883 Miscellaneous corrections on eMIMO Samsung CR Rel-16 38.321 16.0.0 0711 - F NR\_eMIMO-Core

### 6.16.2 RRC open issues

Including output of email discussion [Post109e#34][eMIMO] RRC Open issues (Ericsson). Contributions related to issues addressed by this email discussions should be avoided and are discouraged for this AI.

Including contributions/TPs/DraftCRs on eMIMO-specific Class 3 ASN.1 review aspects, if any. For these, no individual company CRs should be submitted: please consult with the RRC CR rapporteur first (helka-liina.maattanen@ericsson.com).

R2-2002870 Correction on the number of CORESETs per BWP (RIL v101) vivo CR Rel-16 38.331 16.0.0 1529 - F NR\_eMIMO-Core

R2-2002871 Correction on RLM RS configuration (RIL v102) vivo CR Rel-16 38.331 16.0.0 1530 - F NR\_eMIMO-Core

R2-2003181 [Post109e#34][EMIMO] RRC Open Issues (Ericsson) Ericsson discussion Rel-16 NR\_eMIMO-Core

R2-2003710 Correction on Multi-DCI based multi-TRP transmission for eMBB Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 F NR\_eMIMO-Core Late

R2-2003711 Corrections on multi-TRP transmission for URLLC Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 F NR\_eMIMO-Core Late

R2-2003892 Offline discussion 102: eMIMO RRC aspects - first round Ericsson (Rapporteur) discussion Rel-16 NR\_eMIMO-Core

### 6.16.3 Other open issues

Including output of email discussion [Post109e#17][eMIMO] BFR MAC CE for BFR on SpCell (Apple). Contributions related to issues addressed by this email discussions should be avoided and are discouraged for this AI.

MAC Corrections. The proposals in the following papers are summarized in R2-2003795

R2-2002557 Issues - SCell BFR Samsung Electronics Co., Ltd discussion Rel-16 NR\_eMIMO-Core

R2-2002605 Discussion on pending BFR SR upon SCell deactivation Sharp, Samsung discussion NR\_eMIMO-Core

R2-2002872 Discussion on the SCell BFD on the deactivated SCell vivo discussion Rel-16 NR\_eMIMO-Core

R2-2002873 Correction on the SP SRS ActivationDeactivation MAC CE vivo discussion Rel-16 NR\_eMIMO-Core

R2-2002882 Considerations on the number of pathloss RSs indicated by MAC CE Samsung discussion Rel-16 NR\_eMIMO-Core

R2-2002926 SR configuration for SCell beam failure recovery Lenovo, Motorola Mobility discussion Rel-16 NR\_eMIMO-Core

R2-2002954 CC list-based SRS Activation/Deactivation MAC CE design OPPO discussion Rel-16 NR\_eMIMO-Core

R2-2002957 [Post109e#17] Identified other open issues Fujitsu discussion Rel-16 NR\_eMIMO-Core

R2-2003051 Draft CR on bitmap length determination for BFR MAC CE Nokia, Nokia Shanghai Bell, Apple draftCR Rel-16 38.321 16.0.0 NR\_eMIMO-Core

R2-2003052 Draft CR on Corrections for SCell BFR procedure Nokia, Nokia Shanghai Bell, Apple draftCR Rel-16 38.321 16.0.0 NR\_eMIMO-Core

R2-2003252 Correction on new DL MIMO MAC CE Qualcomm Incorporated discussion Rel-16 NR\_eMIMO-Core

R2-2003253 Cancellation the pending BFR SR Qualcomm Incorporated discussion Rel-16 NR\_eMIMO-Core

R2-2003358 Change LCID to eLCID for MIMO MAC CEs Ericsson CR Rel-16 38.321 16.0.0 0723 - F NR\_eMIMO-Core

R2-2003588 Remaining issue on aborting of ongoing RACH triggred by SR ZTE, Sanechips discussion Rel-16 NR\_eMIMO-Core

R2-2003618 Discussion on open issues on BFR MAC CE Google Inc. discussion Rel-16

R2-2003650 Remaining issues regarding cancellation of triggered BFRs for SCell ASUSTeK discussion Rel-16 38.321 NR\_eMIMO-Core

R2-2003651 Discussion on completion of RA procedure for SCell beam failure recovery ASUSTeK discussion Rel-16 38.321 NR\_eMIMO-Core

R2-2003663 Clarification on scheduling request for SCell beam failure recovery Google Inc. draftCR Rel-16 38.321 16.0.0 F NR\_eMIMO-Core

R2-2003795 Summary of proposed corrections\_AI\_6\_16\_3 Samsung Electronics Co., Ltd discussion Rel-16 NR\_eMIMO-Core

BFR on SpCell

R2-2002795 Report of [Post109e#17][EMIMO] BFR MAC CE for BFR on SpCell Apple discussion NR\_eMIMO-Core

R2-2003893 Offline discussion 103: BFR on SpCell - first round Apple discussion NR\_eMIMO-Core

R2-2003034 Consideration on SpCell BFR MAC CE LG Electronics Inc. discussion NR\_eMIMO-Core

R2-2003713 BFR MAC CE for SpCell Huawei, HiSilicon discussion Rel-16 NR\_eMIMO-Core

Timer based BFR MAC CE Transmission

R2-2002796 Timer based BFR MAC CE Transmission Apple, Nokia, Nokia Shanghai Bell discussion NR\_eMIMO-Core

R2-2003589 Remaining issues on BFR on SCell ZTE, Sanechips discussion Rel-16 NR\_eMIMO-Core

R2-2003712 Remaining issues on SCell BFR Huawei, HiSilicon discussion Rel-16 NR\_eMIMO-Core

R2-2003894 Offline discussion 104: Timer based BFR MAC CE Transmission Nokia discussion NR\_eMIMO-Core

DCI format 1\_2 applicability

R2-2003345 On DCI format 1\_2 applicability with NR eMIMO Ericsson discussion Rel-16 NR\_eMIMO-Core

## 6.18 Private Network Support for NG-RAN

(NG\_RAN\_PRN-Core; leading WG: RAN3; REL-16; started: Mar 19; target; June 20; WID: [RP-](file:///C:\Data\3GPP\archive\RAN\RAN%2384\Tdocs\RP-191563.zip)200122 SR; RP-200441) Documents in this agenda item will be handled in a break out session.

Tdoc Limitation: 2 tdocs

It's possible to contribute to all sub agenda items, to address the remaining open issues.

### 6.18.1 Organisational

Including incoming LSs, rapporteur inputs, etc.

Contributions in this AI are reserved for WI rapporteur inputs and do not count towards the tdoc limits.

R2-2002502 Reply LS on sending CAG ID (C1-201027; contact: Ericsson) CT1 LS in Rel-16 Vertical\_LAN To:SA, SA2 Cc:RAN2, RAN3, SA3

### 6.18.2 RRC open issues

Including output of email discussion [Post109e#18][PRN] Remaining open issues (Nokia). Contributions related to issues addressed by this email discussions should be avoided and are discouraged for this AI.

Including contributions/TPs/DraftCRs on PRN-specific Class 3 ASN.1 review aspects, if any. For these, no individual company CRs should be submitted: please consult with the RRC CR rapporteur first (gyorgy.wolfner@nokia.com).

R2-2002658 Finalization of the support of Non-Public Networks Nokia (Rapporteur) CR Rel-16 38.331 16.0.0 1513 - F NG\_RAN\_PRN-Core Late

R2-2002659 Report from email discussion [Post109e#18][PRN] Remaining open issues Nokia (Rapporteur) discussion Rel-16 NG\_RAN\_PRN-Core

R2-2003895 Offline discussion 105: PRN open issues - first round Nokia (Rapporteur) discussion Rel-16 NG\_RAN\_PRN-Core

R2-2002666 Blacklist/whitelist for PCI range signaling and stage-3 details Sony discussion Rel-16 NG\_RAN\_PRN-Core

R2-2002745 Further consideration on the PCI range ZTE Corporation, Sanechips discussion Rel-16 NG\_RAN\_PRN-Core

R2-2002746 Further consideration on the cell reselection for the licensed spectrum ZTE Corporation, Sanechips discussion Rel-16 NG\_RAN\_PRN-Core

R2-2003319 Cell reselection restriction for SNPN and CAG Intel Corporation discussion Rel-16 NG\_RAN\_PRN-Core

R2-2003501 Remaining Issues the PCI Range CMCC discussion Rel-16 NG\_RAN\_PRN-Core

R2-2003507 Remaining issues on access and mobility control for NPN CMCC discussion Rel-16 NG\_RAN\_PRN-Core

R2-2003529 Discussion on the ANR for NPN vivo discussion

R2-2003604 Emergency sessions on CAG-only cell for non-CAG capable R16 UEs LG Electronics France discussion NG\_RAN\_PRN-Core

R2-2003606 On SNPN Cell Reselection in Licensed Bands NEC Telecom MODUS Ltd. Discussion

### 6.18.3 Other open issues

Including non-RRC issues not addressed in [Post109e#18].

If needed, a summary document may also be utilized to treat this agenda item.

R2-2002593 Cell selection and reselection for NPN Ericsson discussion Rel-16 NG\_RAN\_PRN-Core

R2-2002594 Manual selection of PNI NPNs when CAG is broadcast Ericsson discussion Rel-16 NG\_RAN\_PRN-Core

R2-2002734 Discussion on HRNNs Reporting Issue CATT discussion Rel-16 NG\_RAN\_PRN-Core

R2-2002736 Discussion on UE Behavior in Licensed Band with Non-CAG Member Cell CATT discussion Rel-16 NG\_RAN\_PRN-Core

R2-2003259 Consideration of HRNN and UAC in PRN China Telecom discussion Rel-16

R2-2003261 Remaining issues discussion on NPN China Telecom discussion Rel-16

R2-2003394 Emergency call support on CAG-only cells Qualcomm Incorporated discussion Rel-16 NG\_RAN\_PRN-Core

R2-2003421 Running CR to TS 38.304 for PRN Qualcomm Incorporated CR Rel-16 38.304 16.0.0 0156 - F NG\_RAN\_PRN

R2-2003474 Discussion on manual CAG selection Huawei, HiSilicon, China Telecom discussion Rel-16 NG\_RAN\_PRN-Core

R2-2003475 Discussion on mechanisms for the network to control manual NPN selection Huawei, HiSilicon, China Telecom discussion Rel-16 NG\_RAN\_PRN-Core

R2-2003558 Some Issues related to 38.304 Samsung R&D Institute India discussion

R2-2003605 Intra-frequency reselection upon selecting non-suitable SNPN cell LG Electronics France discussion NG\_RAN\_PRN-Core

R2-2003608 Remaining issues related to Manual CAG Selection Samsung R&D Institute India discussion

## 6.19 Other NR Rel-16 WIs/SIs

This agenda item is to be used for LSs and documents relating to Rel-16 NR but for which there is no existing RAN WI/SI (e.g. LSs from CT/SA requesting RAN2 action) or for which there is no allocated RAN2 time (e.g. some RAN4 led WIs with no RAN2 time but might require introduction of UE capability signalling).

Time budget: 0.5 TU

Including outcome of the email discussion [Post109e#33][R16 Other] UL TX Switching – NR-FR1 (China Telecom)

No R2 tdocs

Treated in email discussion [AT109bis-e][000]

R2-2002504 LS on MO exception data (C4-201003; contact: CATT) CT4 LS in Rel-16 5G\_CIoT To:SA2 Cc:RAN2, CT1

* [000] Noted

R2-2002538 Reply LS on Enhancements to QoS Handling for V2X Communication Over Uu Reference Point (S2-2001675; contact: Nokia) SA2 LS in Rel-16 eV2XARC To:RAN3, RAN2

* [000] Noted

FDD band capability signalling for uplink sharing

R2-2002526 LS on FDD band capability signalling for uplink sharing (R4-1916180; contact: Nokia) RAN4 LS in Rel-16 NR\_FDD\_bands\_varduplex To:RAN2

* [040] noted

R2-2002575 ULSUP applicability to FDD bands Qualcomm Incorporated discussion Rel-16 NR\_FDD\_bands\_varduplex

* [040] noted

R2-2003446 Discussion on UL sharing for variable-duplex FDD bands Huawei, HiSilicon discussion Rel-16 NR\_FDD\_bands\_varduplex

* [040] noted
* [AT109bis-e][040][NR16 Other] FDD band capability signalling for uplink sharing (QC)

Scope: Treat papers above on FDD band capability signalling for uplink sharing

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

[040] DISCUSSION

- [040] QC: as the rapporteur, summary of the discussion so far is that majority think option 1 (do nothing as proposed in R2-2003446) works for the moment. Option 2 (R2-2002575) got more support towards the end, but the amount of support does not seem sufficient to change something that is not broken at this moment.

- [040] Huawei: If in the future there would be UL sharing for FDD bands, we need to discuss again whether we should have new capability signaling. Currently this is premature to conclude so.

- [040] QC: So the current UE capability works with the UL sharing band combinations defined in the existing version of 38.101, but we do not know if it will work in one year from now.

* [040] No change to the current specification. The existing UE capability parameter ul-SharingEUTRA-NR works for any of the relevant band combinations with UL sharing that the RAN4 specification defines today.

Not Treated:

R2-2002576 Introduction of UE capability for ULSUP with FDD band Qualcomm Incorporated, Nokia, OPPO CR Rel-15 38.331 15.9.0 1507 - F NR\_FDD\_bands\_varduplex

R2-2002577 Introduction of UE capability for ULSUP with FDD band Qualcomm Incorporated, Nokia, OPPO CR Rel-15 38.306 15.9.0 0263 - F NR\_FDD\_bands\_varduplex

MPE enhancements FR2

R2-2002527 LS on MPE enhancements (R4-1916183; contact: Qualcomm) RAN4 LS in Rel-16 NR\_RF\_FR2\_req\_enh To:RAN2

* [041] noted

R2-2002534 LS on MPE enhancements (R4-2002916; contact: Nokia) RAN4 LS in Rel-16 NR\_RF\_FR2\_req\_enh To:RAN2

* [041] noted

1 doc moved here from 6.20.3.1 :

R2-2002820 P-MPR Reporting Apple discussion Rel-16 NR\_RF\_FR2\_req\_enh

* [041] noted

R2-2002684 UE FR2 MPE enhancements and solutions Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_RF\_FR2\_req\_enh

* [041] noted
* [AT109bis-e][041][NR16 Other] MPE enhancements FR2 (Nokia)

Scope: Treat papers above on MPE enhancements FR2

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

DISCSUSSION

- [041] Chair: There are many comments that we should wait until there is more progress in R4 on FR2 MPE.

Not Treated

R2-2002685 Introduction of FR2 MPE P-MPR reporting Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.0.0 1515 - B NR\_RF\_FR2\_req\_enh

R2-2002686 Introduction of FR2 MPE P-MPR reporting Nokia, Nokia Shanghai Bell CR Rel-16 38.321 16.0.0 0707 - B NR\_RF\_FR2\_req\_enh

R2-2002687 Introduction of FR2 MPE P-MPR reporting Nokia, Nokia Shanghai Bell CR Rel-16 38.306 16.0.0 0272 - B NR\_RF\_FR2\_req\_enh

R2-2002688 Introduction of FR2 MPE P-MPR reporting Nokia, Nokia Shanghai Bell CR Rel-16 38.300 16.1.0 0210 - B NR\_RF\_FR2\_req\_enh

P bit for Single Entry PHR

R2-2002532 LS on the misalignment in P-bit between single entry and multi-entry PHR (R4-2002820; contact: OPPO) RAN4 LS in Rel-16 NR\_RF\_FR2\_req\_enh To:RAN2

* [042] Noted

R2-2002616 P bit in Single Entry PHR MAC CE Samsung discussion Rel-16 NR\_RF\_FR2\_req\_enh

* [042] Noted

Moved from 5.3.1:

R2-2002676 Discussion on P indcatior in single entry PHR OPPO discussion Rel-16

* [042] Noted

R2-2003010 P bit for Single Entry PHR Nokia, Nokia Shanghai Bell, Apple, Ericsson, Lenovo, NTT DOCOMO, INC. CR Rel-16 38.321 16.0.0 0716 - F TEI16 Late

* [042] Agreed-in-principle

R2-2004214 UE capability for single entry PHR with P bit OPPO, Ericsson, MediaTek Inc., Nokia, Nokia Shanghai Bell, vivo, ZTE, Xiaomi CR Rel-16 38.331 16.0.0 1589 - F TEI16

* [042] Agreed-in-principle

R2-2004215 UE capability for single entry PHR with P bit OPPO, Ericsson, MediaTek Inc., Nokia, Nokia Shanghai Bell, vivo, ZTE, Xiaomi, CR Rel-16 38.306 16.0.0 0296 - F TEI16

* [042] Agreed-in-principle
* [AT109bis-e][042][NR16 Other] P bit for Single Entry PHR (OPPO)

Scope: Treat papers above on P bit for Single Entry PHR

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

Bandwidth combination set to asymmetric bandwidths

R2-2002533 LS to RAN2 on introduction of channel bandwidth combination set to asymmetric channel bandwidths (R4-2002852; contact: Huawei) RAN4 LS in Rel-16 NR\_n66\_BW To:RAN2

* [043] Noted

R2-2003469 CR on introduction of BCS to asymmetric channel bandwidths (38.331) Huawei, HiSilicon, Telus CR Rel-16 38.331 16.0.0 1563 - B NR\_n66\_BW

- There were comments to hold the RRC CR (in addtiion to R15 potential CRs, until LS reply from R4).

* [043] Postponed

R2-2003470 CR on introduction of BCS to asymmetric channel bandwidths (38.306) Huawei, HiSilicon, Telus CR Rel-16 38.306 16.0.0 0289 - B NR\_n66\_BW

R2-2004210 CR on introduction of BCS to asymmetric channel bandwidths (38.306) Huawei, HiSilicon, Telus CR Rel-16 38.306 16.0.0 0289 1 B NR\_n66\_BW

* [043] Agreed in principle

R2-2004211 Draft reply LS on asymmetric channel bandwidths Huawei

* [043] approved in R2-2004268
* [AT109bis-e][043][NR16 Other] Bandwidth combination set to asymmetric bandwidths (Huawei)

Scope: Treat papers above on Bandwidth combination set to asymmetric bandwidths

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

R2-2002631 Introduction of asymmetric BW BCS 1 OPPO CR Rel-16 38.331 16.0.0 1509 - B NR\_n66\_BW

R2-2002632 Introduction of asymmetric BW BCS 1 OPPO CR Rel-16 38.306 16.0.0 0267 - B NR\_n66\_BW

R2-2002633 Introduction of asymmetric BW BCS 0 OPPO CR Rel-15 38.306 15.9.0 0268 - B NR\_n66\_BW

R2-2002634 Introduction of asymmetric BW BCS 0 OPPO CR Rel-16 38.306 16.0.0 0269 - A NR\_n66\_BW

Support for ECN in 5GS

R2-2002537 LS on the support for ECN in 5GS (S2-1912765; contact: Qualcomm) SA2 LS in Rel-15 5GS\_Ph1 To:RAN2, SA4 Cc:RAN3, CT1

* [044] Noted

R2-2002543 Reply LS on Support for ECN in 5GS (S4-200298; contact: Qualcomm) SA4 LS in Rel-15 5GS\_Ph1 To:SA2 Cc:RAN2, RAN3, CT1

* [044] Noted
* [AT109bis-e][044][NR16 Other] Support for ECN in 5GS (Qualcomm)

Scope: Treat papers above on support for ECN in 5GS

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

R2-2002580 [DRAFT] Response LS on the support for ECN in 5GS Qualcomm Incorporated LS out Rel-16 5GS\_Ph1 To:SA2 Cc:RAN3, CT1, SA4

* Revised

R2-2004256 Response LS on the support for ECN in 5GS RAN2 LS out Rel-16 5GS\_Ph1 To:SA2 Cc:RAN3, CT1, SA4

* [044] Approved

Not Treated:

R2-2003426 Correction to description of ECN Ericsson CR Rel-15 38.300 15.9.0 0218 - F NR\_newRAT-Core

R2-2003427 Correction to description of ECN Ericsson CR Rel-16 38.300 16.1.0 0219 - A NR\_newRAT-Core

**UL TX Switching-NR\_FR1**

R2-2002531 LS on UE Tx switching period delay and DL interruption (R4-2002816; contact: Apple) RAN4 LS in Rel-16 NR\_RF\_FR1 To:RAN1, RAN2

* [045] Noted

R2-2003264 Report of email discussion [Post109e#33][R16 Other] UL TX Switching-NR\_FR1 ChinaTelecom discussion Rel-16 NR\_RF\_FR1

=> Revised in R2-2003823

R2-2003823 Report of email discussion [Post109e#33][R16 Other] UL TX Switching-NR\_FR1 ChinaTelecom discussion Rel-16 NR\_RF\_FR1

* [045] Noted

R2-2002689 Clarifications on UL Tx switching Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_RF\_FR1 R2-2000861 Late

* [045] Noted

R2-2002805 On Tx switching Apple CR Rel-16 38.331 16.0.0 1524 - B NR\_newRAT-Core

* [045] Noted

R2-2002806 On Tx switching Apple CR Rel-16 38.306 16.0.0 0275 - B NR\_newRAT-Core

* [045] Noted
* [AT109bis-e][045][NR16 Other] UL TX Switching-NR\_FR1 (China Telecom)

Scope: Treat papers above on UL TX Switching-NR\_FR1. If convergence is difficult, this may be treated on-line.

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

R2-2004201 Report of [AT109bis-e][045][NR16 Other] UL TX Switching-NR\_FR1 (China Telecom) China Telecom

DISCUSSION Q1, 2, 7

- Nokia wonders what it means, is this about network config or UE capability. CT indicate that 1, 2,3, is for configuration.

Q3

- Nokia think that both UE and network need to understand where the interruption is, and it depends on carrier roles. Need to be clear both in config can UE cap.

- Docomo also wonder what sufficient means, whether a restriction is assumed that makes this sufficient.

- ZTE think that only carrier 2 support UL mimo but not carrier 1, so this can be determined by the mimo capability.

- Ericsson think this can be problematic, and we don’t need to rely on implicit determination. Explicit would always work.

- Huawei think the explicit indication is not needed, UE can determine by scheduling. CATT agrees.

- This may depend on future scenarios, so only for future proofness we would need explicit signalling. Apple agrees.

- QC think we should not have implicit determination beased on capability for configuration. We asked for this in a R1 LS. Nokia agrees.

- Samsung think both can work but explicit configuration is better. MTK agrees.

- Huawei think that for explicit configuration we might need to await progress in R1.

Q4

- Ericsson think that if there is different capability for different fallback combinations, the the fallback can be explicitly reported.

- QC wonder how this capability is indicated, no of layers etc ..

- Huawei understand there may indeed be BC issues, UE would report 1+1 or 1+2, QC think that if there is uncertainty it is safer to have a new list. Nokia agrees, and think the normal case is that the fallbacks are the ones for which there will be this capability.

- Ericsson think that with the filter there is no issue, and think the 1+1 1+2 issues can be resolved in FSC lists.

- MTK have not a strong view, and think both ways can work. Think legacy impacts can be resolved.

- Ericsson has concerns that there may be cross dependencies between legacy list and new list.

- Apple wonder if the fallback can be reported then. Ericsson think this is in general possible, except for explicit cases listed in the TS.

- Ct think that if we use the legacy BC we need to identify the capabilities are affected and this can be a significant job.

- Nokia think that both solutions can work, think that using a new list is a bit ugly but proponents could provide an example. Huawei think that also using the legacy list would be ugly.

* In configuration indicate the UL carrier pair (a carrier on one band and another carrier on the other band) for UL Tx switching.
* In configuration indicate switching period (i.e., UL interruption) in *UplinkConfig*.
* to use UE capability filter for UL Tx switching capability reporting.
* R2 assumes that in configuration, we’d have explicit indicating that which carrier is carrier1, which carrier is carrier2.
* New or existing band combination list, under which the UE capabilities associated with UL Tx switching are reported, decide next meeting
* [Post109bis-e][R16 Other] (China Telecom)

Scope: Make progress, pave the way for desicions needed to close this issue, take into account R1 LS (and R4 LS). Proponents could provide CR variants for review.

Intended outcome: Report

Deadline: Next meeting

R2-2003266 38331CR for UE capability and RRC configuration of supporting UL Tx switching ChinaTelecom CR Rel-16 38.331 16.0.0 1546 - B NR\_RF\_FR1

R2-2003265 38306CR for UE capability of supporting UL Tx switching ChinaTelecom CR Rel-16 38.306 16.0.0 0277 - B NR\_RF\_FR1

EN-DC FDD+TDD HPUE

R2-2003448 On the support of EN-DC FDD+TDD HPUE Huawei, HiSilicon discussion Rel-16 ENDC\_UE\_PC2\_FDD\_TDD-Core

* [046] Noted
* [AT109bis-e][046][NR16 Other] EN-DC FDD+TDD HPUE (Huawei)

Scope: Treat papers above on EN-DC FDD+TDD HPUE.

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

CLOSED

* [046] On this topic we wait for LS from R4

Not Treated>

R2-2003449 support of EN-DC FDD+TDD HPUE Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 B ENDC\_UE\_PC2\_FDD\_TDD-Core

R2-2003450 support of EN-DC FDD+TDD HPUE Huawei, HiSilicon draftCR Rel-16 38.306 16.0.0 B ENDC\_UE\_PC2\_FDD\_TDD-Core

NR HST

R2-2003508 38.331 CR on introduction of RRC parameters and UE capabilities for Rel-16 NR HST CMCC, Huawei, HiSilicon, CATT CR Rel-16 38.331 16.0.0 1464 2 B NR\_HST R2-2002085

[R2-2004181](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004181.zip) 38.331 CR on introduction of RRC parameters and UE capabilities for Rel-16 NR HST CMCC, Huawei, HiSilicon, CATT CR Rel-16 38.331 16.0.0 1464 3 B NR\_HST R2-2002085

* [047] Agreed in principle

R2-2003509 38.306 CR on introduction of UE capabilities for Rel-16 NR HST CMCC, Huawei, HiSilicon, CATT CR Rel-16 38.306 16.0.0 0242 2 B NR\_HST R2-2002086

[R2-2004182](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004182.zip) 38.306 CR on introduction of UE capabilities for Rel-16 NR HST CMCC, Huawei, HiSilicon, CATT CR Rel-16 38.306 16.0.0 0242 3 B NR\_HST R2-2002086

* [047] Endorsed (a TBD need to be addressed)
* [AT109bis-e][047][NR16 Other] NR HST (CMCC)

Scope: Treat papers above on NR HST. If convergence is difficult, this may be treated on-line.

Wanted Outcome: Agreed-in-principle CRs

Deadline: April 28 0700 UTC

[R2-2004238](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004238.zip) Summary for views on NR HST CRs CMCC

* [047] Noted

Temporary Boost – not treated

R2-2002738 Temporary Boost Nokia, Nokia Shanghai Bell discussion Rel-16 R2-2000573

R2-2002739 LS on Temporary Boost Nokia LS out Rel-16 R2-2000574 To:SA4 Cc:RAN3, SA2

## 6.20 NR TEI16 enhancements

Small Technical Enhancements to NR. TEI should be predominantly within a single WG and fully completed within the same quarter in all affected WGs. RAN2 impact of RAN1/4-led TEI shall be limited to RRC signalling of configuration parameters and UE capabilities (no MAC impact, no RRC procedural impact, etc). Please also see [RP-191602](file:///C:\Data\3GPP\TSGR\TSGR_84\docs\RP-191602.zip) endorsed at RAN#84. Please submit to 6.20.x.

NOTE that proponent companies are responsible to ensure that correct CRs are provided in all groups for proposals that have impact in >1 working group.

Time budget: 1 TU

Tdoc Limitation: 2 tdocs. NOTE for TEI, the tdoc limitation applies to new proposals, not to open proposals since previous meeting(s)

### 6.20.1 RAN2 led TEI16 enhancements - Control plane related

#### 6.20.1.1 Open / ongoing proposals

**5G Indicator**

R2-2002535 LS on 5G indicator (RP-193265; contact: Intel) RAN LS in Rel-16 NR\_newRAT-Core, TEI16 To:RAN2 Cc:SA, CT, GSMA

* [048] Noted

1 doc moved from 5.4.2:

R2-2002660 A RAN Based Solution for the 5G Indicator VODAFONE discussion

* [048] Noted

R2-2003420 EN-DC bandlist for 5G indicator Huawei, HiSilicon, BT, Telefonica, Telecom Italia S.p.A., Samsung discussion Rel-15 36.331 NR\_newRAT

* [048] Noted

R2-2002969 Upper layer indication ZTE Corporation, Sanechips discussion

* [048] Noted
* [AT109bis-e][048][TEI16] 5G Indicator (Intel)

Scope: Treat papers above on 5G indicator. If convergence is difficult, this may be treated on-line.

Wanted Outcome: Agreed solution in Agreed-in-principle CRs

Deadline: April 28 0700 UTC

R2-2004193 Report from email discussion [AT109bis-e][048][TEI16] on 5G indicator Intel Corporation

DISCUSSION

- [048] Chair: It seems that the proposals 1-6 can be considered agreed. Also P7 is in my opinion ok, but whether we have a 306 CR is not a blocking point for this feature. If a 306 CR is strictly wanted, there is opportunity to discuss that at next meeting. In any case, we have no 306 CR from this meeting.

Agreements email discussion [048] :

* A new SIB is introduced to LTE system information to carry the NR frequency band information.
* In connected mode, do not introduce any differentiation in the UE behaviour for providing the upperLayerIndication depending on whether the UE is in DRX or not.
* Do not capture hysteresis for toggling the upperLayerIndication within the 3GPP specifications.
* RAN2 chair to report to RAN plenary that the task assigned to RAN2 is complete and that RAN plenary is requested to communicate completion of the activity to GSMA once the CR(s) are approved.
* CRs to be introduced in Rel-16
* Add the 'magic' sentence to the CR coversheet (i.e. "Implementation of this CR from Rel-N will not cause interoperability issues" and list the CR in Annex G.

R2-2003419 Introduction in new SIB of bandlist for ENDC for 5G indicator Huawei, HiSilicon, BT, Samsung CR Rel-16 36.331 16.0.0 4266 - C NR\_newRAT-Core

* Revised

Not Treated:

R2-2003418 Introduction in new SIB of bandlist for ENDC for 5G indicator Huawei, HiSilicon, BT, Samsung CR Rel-15 36.331 15.9.0 4265 - C NR\_newRAT-Core

R2-2003416 Introduction of bandlist for ENDC for 5G indicator HUAWEI, HiSilicon, Telefonica, Telecom Italia S.p.A., Samsung CR Rel-16 36.331 16.0.0 4214 2 C NR\_newRAT-Core R2-2002098

R2-2003417 Introduction of bandlist for ENDC for 5G indicator Huawei, HiSilicon, Telefonica, Telecom Italia S.p.A., Samsung CR Rel-16 36.331 16.0.0 4264 - A NR\_newRAT-Core

**NeedForGap**

R2-2002770 Remaining issue on NR NeedForGap signaling MediaTek Inc. discussion Rel-16 TEI16

* [049] Noted

R2-2002781 Introduction of NeedForGap capability for NR measurement - 36.331 MediaTek Inc. CR Rel-16 36.331 16.0.0 4197 3 B NR\_newRAT-Core, TEI16 R2-2002108

R2-2002782 Introduction of NeedForGap capability for NR measurement - 36.306 MediaTek Inc. CR Rel-16 36.306 16.0.0 1730 1 B NR\_newRAT-Core, TEI16 R2-2000718

* Agreed in principle

R2-2002783 Introduction of NeedForGap capability for NR measurement - 38.300 MediaTek Inc. CR Rel-16 38.300 16.1.0 0191 1 B NR\_newRAT-Core, TEI16 R2-2000719

R2-2004160 Introduction of NeedForGap capability for NR measurement - 38.300 MediaTek Inc. CR Rel-16 38.300 16.1.0 0191 2 B NR\_newRAT-Core, TEI16 R2-2000719

* Agreed in principle

R2-2002784 Introduction of NeedForGap capability for NR measurement - 38.331 MediaTek Inc. CR Rel-16 38.331 16.0.0 1453 2 B NR\_newRAT-Core, TEI16 R2-2002309

R2-2004161 Introduction of NeedForGap capability for NR measurement - 38.331 MediaTek Inc. CR Rel-16 38.331 16.0.0 1453 3 B NR\_newRAT-Core, TEI16 R2-2002309

* Agreed in principle

R2-2002785 Introduction of NeedForGap capability for NR measurement - 38.306 MediaTek Inc. CR Rel-16 38.306 16.0.0 0238 1 B NR\_newRAT-Core, TEI16 R2-2000721

* Agreed in principle

R2-2002811 Discussion on NeedForGap Apple discussion TEI16

* [049] Noted

R2-2002812 Draft LS to RAN4 on NeedForGap Apple discussion TEI16

* [049] Noted
* [AT109bis-e][049][TEI16] Need for Gap (Mediatek)

Scope: Treat papers above on Need for Gap. If convergence is difficult, this may be treated on-line. Keep this simple please.

Wanted Outcome: Agreed solution, if possible Agreed-in-principle CRs

Deadline: April 28 0700 UTC

R2-2004159 Report of [AT109bis-e][049][TEI16] Need for Gap (Mediatek) Mediatek

DISCSUSION

- ZTE support all P except 4

P4

- Apple think we can discuss by email what should be the contents

* Introduce an optional target band filter configuration for dynamic need for gap reporting.
  + - **If configured, the UE reports the NeedForGap information for the NR bands that are included in the filter and supported by the UE.**
    - **If not configured, the UE reports the NeedForGap information for all supported NR bands.**
    - **No matter the band filter is configured or not, the band indicator is included in the inter-frequency NeedForGap reporting.**
* Introduce need for gap signaling for intra-frequency measurement as following
  + - **The gap requirement information is reported for each configured NR serving cell.**
    - **If the UE indicates “gap”, the original rule in 38.300 applies.**
    - **If the UE indicates “no-gap”, a measurement gap is not needed to measure the SSB associated to the initial DL BWP for all configured BWPs, no matter the SSB is within the configured BWP or not.**
* RAN2 confirms that the NR NeedForGap information reporting is only for SSB-based measurement in Rel-16.
* Send LS to RAN4 to inform RAN4 on the design of NR NeedForGap signaling
* For inter-frequency need for gap reporting, RAN2 confirms that “no-gap” indication implies that the UE is able to do gapless measurement on the concerned band regardless the SCS of target SSB.
* Email discussion 1 week for LS approval
* [Post109bis-e][TEI16] Need for Gap LS (Mediatek)

Scope: LS OUT to RAN4, based on discussion in AT109bis-e [049]

Wanted Outcome: Approved LS

Deadline: Short

**Overheating**

R2-2003467 36.331 CR for addressing overheating issue in (NG)EN-DC Huawei, Huawei Device, Apple, CATT CR Rel-16 36.331 16.0.0 4176 2 F TEI16 R2-2001325

R2-2003468 38.331 CR for addressing overheating issue in (NG)EN-DC Huawei, Huawei Device, Apple, CATT CR Rel-16 38.331 16.0.0 1413 2 F TEI16 R2-2001326

* [AT109bis-e][050][TEI16] Overheating (Huawei)

Scope: Treat papers above on Overheating.

Wanted Outcome: Agreed solution, if possible Agreed-in-principle CR(s)

Deadline: April 28 0700 UTC

**EN-DC cell reselection**

R2-2003490 Further consideration on EN-DC cell reselection CMCC,SoftBank, Ericsson, Huawei, ZTE, CATT, vivo, OPPO, Xiaomi discussion Rel-16

* [051] Noted

R2-2003724 Further discussion on EN-DC cell reselection Samsung Electronics Co., Ltd discussion Rel-16 TEI16

* [051] Noted

R2-2003492 36.304 CR to introduce alternative cell reselection priority for EN-DC CMCC, SoftBank, Ericsson, Huawei, ZTE, CATT, vivo, OPPO CR Rel-16 36.304 16.0.0 0782 1 B TEI16 R2-200203

* [051] Agreed in princple

R2-2003493 36.306 CR to introduce alternative cell reselection priority for EN-DC CMCC, SoftBank, Ericsson, Huawei, ZTE, CATT, vivo, OPPO CR Rel-16 36.306 16.0.0 1755 - B TEI16

* [051] Agreed in princple

R2-2003491 36.331 CR to introduce alternative cell reselection priority for EN-DC CMCC, SoftBank, Ericsson, Huawei, ZTE, CATT, vivo CR Rel-16 36.331 16.0.0 4229 1 B TEI16 R2-2002038

* Email discussion to next meeting
* [AT109bis-e][051][TEI16] EN-DC cell reselection (CMCC)

Scope: Treat papers above on EN-DC cell reselection.

Wanted Outcome: Agreed solution, if possible Agreed-in-principle CR(s)

Deadline: April 28 0700 UTC

R2-2004237 Summary for EN-DC cell reselection issue CMCC

* [051] Noted

Agreements Email [051]

* 1 bit *altFreqPriorities-r16* in RRC Release message to indicate whether the UE shall apply the broadcasted alternative frequency priority or not.
* *altFreqPriorities-r16* and dedicated priority should not be configured together in release message.
* The delete mechanism for *altFreqPriorities-r16* is the same as dedicated priority handling as in R15.
* For*camped on any cell* state, the legacy principle for dedicated priority can be reused, i.e. preserve the *alterFreqPriorities-r16*and in this state the UE shall apply the legacy priorities provided in system information rather than the alternative priority, and applies it upon entering Camped Normally state.
* An email discussion after the meeting is suggested to be kicked off to finalization the open points if any, and agree-in-principle the updated CRs.
* We don’t address SA at this point in time. Assume SA can be left to further release.
* [Post109bis-e][TEI16] EN-DC cell reselection (CMCC)

Scope: RRC CR

Wanted Outcome: agreeable CR

Deadline: Next meeting

Not treated:

R2-2003494 38.331 CR to introduce alternative cell reselection priority for SA CMCC, Ericsson, SoftBank, vivo CR Rel-16 38.331 16.0.0 1463 1 B TEI16 R2-2000915

R2-2003495 38.304 CR to introduce alternative cell reselection priority for SA CMCC, Ericsson, SoftBank, vivo CR Rel-16 38.304 16.0.0 0146 1 B TEI16 R2-2000914

R2-2003496 38.306 CR to introduce alternative cell reselection priority for SA CMCC, Ericsson, SoftBank, vivo CR Rel-16 38.306 16.0.0 0290 - B TEI16

R2-2003733 CR on separate cell reselection priority in EN-DC cell reselection in 36.331 Samsung Electronics Co., Ltd CR Rel-16 36.331 16.0.0 4284 - F TEI16

R2-2003739 CR on separate cell reselection priority in EN-DC cell reselection in 38.331 Samsung Electronics Co., Ltd CR Rel-16 38.331 16.0.0 1581 - F TEI16

**Missing reportAddNeighMeas**

R2-2003109 Missing reportAddNeighMeas in periodic measurement reporting Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.0.0 1290 2 F TEI16 R2-1913159

DISCUSSION

- Huawei think this introduces new feature that is not necessary and would like to not have this,

- ZTE think a new UE capability is needed, and it is incomplete. Nokia think we don’t need a capability for every small think, Nokia think Huawei can choose not to use it.

- LG wonder if there is inconsistency.

- Samsung are not sure that periodic is important with the reportAddNeighMeas.

* postpone
* [AT109bis-e][052][TEI16] Missing reportAddNeighMeas (Nokia)

Wanted Outcome: Agreed-in-principle CR

Deadline: April 28 0700 UTC

**TEI16 Corrections - Postponed**

R2-2002560 Corrections to PRACH prioritization procedure for MPS and MCS Samsung Electronics Co., Ltd CR Rel-16 38.321 16.0.0 0705 - F TEI16

R2-2002561 Corrections to PRACH prioritization procedure for MPS and MCS Samsung Electronics Co., Ltd CR Rel-16 38.331 16.0.0 1506 - F TEI16

R2-2002581 Correction on establishment cause value upon enhanced EPS voice fallback Qualcomm Incorporated CR Rel-16 36.331 16.0.0 4236 - F TEI16

R2-2002677 additional SSB-ToMeasure for smtc2-LP OPPO, ZTE, CMCC discussion Rel-16 TEI16

**Treated in positioning parallel session**

R2-2003142 Transfer of unicast RS observations with GNSS integer ambiguity level information Ericsson discussion Rel-16

#### 6.20.1.3 New proposals

This AI is not expected to be treated

R2-2002970 Updates to reestablishment procedure ZTE Corporation, Sanechips, Intel Corporation, CATT CR Rel-16 38.331 16.0.0 1143 5 C TEI16 R2-2001015

R2-2002927 On combined RRC procedures Nokia, Nokia Shanghai Bell, Ericsson discussion Rel-16 TEI16 R2-2001041

R2-2002928 RRC processing delays for combined procedures Nokia, Nokia Shanghai Bell, Ericsson CR Rel-16 38.331 16.0.0 1288 3 F TEI16 R2-2001042

R2-2002640 CR to 38.331 on missing freqBandIndicator in NR redirection Qualcomm Incorporated draftCR Rel-16 38.331 16.0.0 F TEI16

R2-2002641 CR to 36.331 on missing freqBandIndicator in NR redirection Qualcomm Incorporated draftCR Rel-16 36.331 16.0.0 F TEI16

R2-2002764 Clarification on providing network specific uac-AccessCategory1-SelectionAssistanceInfo ZTE Corporation, Sanechips discussion Rel-16 NR\_newRAT-Core

R2-2002765 CR on providing network specific uac-AccessCategory1-SelectionAssistanceInfo ZTE Corporation, Sanechips CR Rel-16 38.331 16.0.0 1520 - F NR\_newRAT-Core

R2-2002792 SRB only connection enhancement for PDU session change CATT,Huawei, HiSilicon discussion Rel-16 TEI16 R2-2000230

R2-2002793 SRB only connection ehancement option 1 CATT,Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 F TEI16 R2-2000231

R2-2002794 SRB only connection ehancement option 2 CATT draftCR Rel-16 38.331 16.0.0 F TEI16 R2-2000232

R2-2002813 UE Information for 0-PDCCH Apple discussion

R2-2002884 Additional UE capability filtering to limit the total number of carriers in NR Samsung discussion Rel-16 TEI16 R2-2000768

R2-2003072 Measurement priority handling in NR Ericsson discussion

R2-2003476 On the support of NG-based (i.e. via CN) handover using CGI report Huawei, HiSilicon discussion Rel-16 TEI16 R2-2001188

R2-2003531 Signalling enhancement for Inactive state CATT discussion Rel-16 TEI16 R2-1914532

R2-2003532 Bearer type negotiation CATT discussion Rel-16 TEI16 R2-1914533

R2-2003723 Discussion on order of two random access procedures in NR to EN-DC Samsung Electronics Co., Ltd discussion Rel-16 TEI16

R2-2003754 Correction on order of two random access procedures in NR to EN-DC HO Samsung Electronics Co., Ltd CR Rel-16 38.331 16.0.0 1584 - F TEI16

### 6.20.2 RAN2 led TEI16 enhancements - User plane related

#### 6.20.2.1 Open / ongoing proposals

LCP Mapping Restrictions

R2-2002740 LCP Mapping Restrictions Nokia, Deutsche Telekom, Ericsson, Fujitsu, Nokia Shanghai Bell, NTT DOCOMO INC., T-Mobile discussion Rel-16 TEI16 R2-2000576

R2-2002741 Dynamic LCP Mapping Restrictions Nokia, Deutsche Telekom, Fujitsu, Nokia Shanghai Bell, NTT DOCOMO INC., T-Mobile CR Rel-16 38.321 16.0.0 0689 1 B TEI16 R2-2000577

R2-2002835 Cell restriction for CA duplication OPPO discussion Rel-16 TEI16 R2-2000406

DISCUSSION

- Chair think this is indeed an old issue, but this was previously not agreed.

- Nokia presents briefly the cases.

- LG think this is a new proposal not an ongoing proposal. Chair think we did indeed discuss this before, but we didn’t agree. This is a late discussion and the most immature one for TEI.

* [AT109bis-e][053][TEI16] LCP Mapping Restrictions (Nokia)

Scope: Treat papers above on LCP Mapping Restrictions.

Wanted Outcome: Agreed solution, if possible Agreed-in-principle CR(s)

Deadline: April 28 0700 UTC

R2-2004114 Offline 053 on LCP Mapping Restrictions Nokia

[053] EMAIL DISCUSSION

- Chair: Due to lack of time there was not possibility to treat this online. Given the support/non-support level I cannot suggest to approve based on the email outcome. However to be fair, many TEI16 proposals there were agreed had opposition and were controversial. Suggest postpone and treat on-line early next meeting.

* [053] Postponed

**Secondary DRX**

R2-2003284 Introduction of secondary DRX group Ericsson, Qualcomm, Samsung, InterDigital, Deutsche Telekom, Verizon discussion Rel-16 NR\_newRAT-Core

R2-2003285 Introduction of secondary DRX group Ericsson, Qualcomm, Samsung, InterDigital, Deutsche Telekom, Verizon CR Rel-16 38.306 16.0.0 0282 - C NR\_newRAT-Core

R2-2003286 Introduction of secondary DRX group Ericsson, Qualcomm, Samsung, InterDigital, Deutsche Telekom, Verizon CR Rel-16 38.321 16.0.0 0721 - C NR\_newRAT-Core

R2-2003287 Introduction of secondary DRX group Ericsson, Qualcomm, Samsung, InterDigital, Deutsche Telekom, Verizon CR Rel-16 38.331 16.0.0 1552 - C NR\_newRAT-Core

R2-2002836 Further considerations on secondary DRX group OPPO discussion Rel-16 TEI16 R2-2000407

R2-2002876 Views on TEI for Secondary DRX Group vivo discussion Rel-16 TEI16

R2-2003103 Discussion on PDCCH-WUS works with Dual DRX Xiaomi Communications discussion

R2-2003115 Further details on Secondary DRX group NEC discussion Rel-16 TEI16

DISCUSSION

- We are waiting for replies from R1 and R4. Ericsson indicate that there are anyway open issues to discuss in R2. QC agrees, e.g. definition of active time.

- Chair reminds that we need to keep this simple, and it is good to keep the scope limited.

- Huawei think we anyway need to wait for other groups agres to keep simple. Huawei think it is better to do between meetings email discussion

- LG would like to postpone the discussion. ZTE also think we can postpone but are ok to just reduce the ambition level. LG still want to postpone.

- Oppo wonder what we will do if here is R1 impact

OFFLINE

- Chair: It seems that indeed R1 send the LS so we can progress this in an email discussion to next meeting.

* [Post109bis-e][] Secondary DRX (Ericsson)

Scope: Treat LS from R1 (and R4 if received), and input papers to R2-109-bis-e on Secondary DRX, to pave the way for agreements.

Wanted Outcome: Report

Deadline: Next meeting

#### 6.20.2.3 New proposals

This AI is not expected to be treated

R2-2002912 CR on PDCP security issue about duplicate detection Samsung, LG Electronics Inc., Nokia, Nokia Shanghai Bell, LG Uplus, Deutsche Telekom CR Rel-16 38.323 16.0.0 0032 4 F TEI16 R2-2000724

- LG requests to add this proposal,

R2-2002998 Retransmission of an RLC SDU with a poll after discard procedure LG Electronics Inc., Ericsson, NTT Docomo, LG Uplus, Sharp discussion Rel-16 TEI16 R2-2001554

R2-2003053 CFRA resource handling for BFR upon TAT expiry Nokia, Nokia Shanghai Bell, Apple, ASUSTek discussion Rel-16 TEI16

R2-2002667 RNTI ambiguity for CFRA and CBRA of 4-Step RACH Sony discussion Rel-16 TEI16 R2-2000832

1 doc Moved from 6.20.3.1:

R2-2003593 Remaining issues on the ambiguity in calculation of RA-RNTI ZTE, Sanechips discussion Rel-16 TEI16

R2-2002742 QoS Flow Handling Nokia, Nokia Shanghai Bell discussion Rel-16 TEI16 R2-2000578

R2-2002743 MDBV Enforcement Nokia, InterDigital, Nokia Shanghai Bell discussion Rel-16 TEI16 R2-2000579

R2-2002880 Unnecessary deciphering for duplicated PDUs Samsung discussion TEI16 R2-2000725

R2-2002937 ON Duration adaptation LG Electronics Inc., LG Uplus, Vivo discussion Rel-16 TEI16 R2-2001285

R2-2003223 Adaptation of QoS Flow to DRB Mapping for MDBV Enforcement Futurewei discussion Rel-16 TEI16

R2-2003403 Maximum Number of DRBs and RLC entities Nokia, Nokia Shanghai Bell discussion Rel-16

R2-2003611 Stopping ra-ResponseWindow for contention-free BFR Huawei, HiSilicon, China Unicom discussion Rel-16 TEI16

### 6.20.3 TEI16 enhancements led by other WGs

Documents submitted to this agenda item will only be treated after a decision on the TEI has been made by another group and an LS informing RAN2 of their decision has been received. Tdoc limitation does not apply.

#### 6.20.3.1 Open / ongoing proposals

DSS UE capability

Postpone yet another meeting, R2 can wait for R1 feature list

R2-2002595 Introduction of enhanced support for dynamic spectrum sharing Ericsson CR Rel-16 38.331 16.0.0 1426 1 B TEI16 R2-2000133

R2-2002596 Introduction of enhanced support for dynamic spectrum sharing Ericsson CR Rel-16 38.306 16.0.0 0221 1 B TEI16 R2-2000134

Under-Reporting CSI-RS Capabilities

Postpone to next meeting, R2 should wait for R1 Reply to LSout from 109e

R2-2003465 Discussion on release for under-reporting CSI-RS capabilities Huawei, HiSilicon, China Telecom, CMCC, China Unicom discussion Rel-16 TEI16

R2-2003466 Signalling design for under-reporting CSI-RS capabilities Huawei, HiSilicon, China Telecom, CMCC, China Unicom discussion Rel-16 TEI16

eCall over NR

R2-2004185 Summary on eCall over NR Huawei

* [055] Noted

Moved from AI 3:

R2-2002549 Reply LS on support for eCall over NR (SP-200287; contact: Qualcomm) SA LS in Rel-16 EIEI, 5GS\_Ph1 To:SA2, SA5, RAN2, CT1, RAN5 Cc:SA1, SA4, RAN, CT

* [055] Noted

R2-2003564 Discussion on eCall over IMS for NR Huawei, HiSilicon discussion Rel-16 TEI16

* [055] Noted

R2-2003565 Introduction of eCall over IMS for NR Huawei, HiSilicon draftCR Rel-16 38.300 16.1.0 C TEI16

- [055] Leonovo: The references to the field names (*eCallOverIMS*, *ims-Emergency*) should be corrected to *eCallOverIMS-Support* and *ims-EmergencySupport*.

- [055] Chairman: this CR can be agreed if the comment from Lenovo is taken into account.

* [055] contents agreed with the comment, CR to be provided to next meeting.

R2-2003566 Introduction of eCall over IMS for NR Huawei, HiSilicon draftCR Rel-16 38.304 16.0.0 C TEI16

* [055] contents agreed, CR to be provided to next meeting

R2-2003567 Introduction of eCall over IMS for NR Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 C TEI16

* revised

R2-2004186 Introduction of eCall over IMS for NR Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 C TEI16

* [055] contents agreed, CR to be provided to next meeting

R2-2003568 Draft reply LS on support for eCall over NR Huawei discussion Rel-16 TEI16

* [055] noted, not needed
* [AT109bis-e][055][TEI16] eCall over NR (Huawei)

Scope: Treat papers above on eCall over NR.

Wanted Outcome: Agreed solution, if possible Agreed-in-principle CR(s)

Deadline: April 28 0700 UTC

## 6.21 On demand SI in connected

On demand SI reception in RRC\_CONNECTED may be relevant to several Rel-16 WIs (e.g. V2X, positioning, IIoT, etc). This agenda item is for the discussion of the generic procedure for on demand SI in RRC\_CONNECTED; WI specific details of the SI content should be discussed within the appropriate AI for that WI.

Tdoc Limitation: 1 tdoc

Including outcome of the email discussion [Post109e#29][OdSIBconn] Open Issues (Ericsson)

Initial Plan is to treat this AI by email. If difficult to converge, on-line treatment could be possible.

* [AT109bis-e][056][OdSIBconn] On demand SI Open issue (Ericsson)

Scope: Treat papers under 6.21, by treating R2-2003204, R2-2003203 and taking into account comments. SIB9 should not be discussed until IIOT WI has made some conclusions.

Part 1: Agreed Solutions, Deadline: April 24 0700 UTC (can be extended if need)

Part 2: Agreed-in-principle CR(s)

Email Discussion & Summary

R2-2003204 Summary of [Post109e#29][OdSIBconn] Open Issues Ericsson discussion Rel-16 NR\_unlic-Core, 5G\_V2X\_NRSL-Core, NR\_IIOT-Core, LTE\_NR\_DC\_CA\_enh-Core, NR\_pos-Core

* [056] Noted

R2-2003203 Feature summary for on-demand SIB in CONNECTED Ericsson discussion Rel-16 NR\_unlic-Core, 5G\_V2X\_NRSL-Core, NR\_IIOT-Core, LTE\_NR\_DC\_CA\_enh-Core, NR\_pos-Core Late

* [056] Noted

R2-2003840 Summary Ericsson

DISCUSSION

P1

- Samsung think that if the UE is not allowed then it may involve network requirements, i.e. either provide the SIB unsolicited by dedicated or by broadcast.

- Ericsson agrees that this is the assumption. Samsung think this was introduced for cell change, but we do need a TS change, change a can to shall, then it would be ok.

- CATT were previsouly negative but are now ok.

- Huawei think the indication is a support indication for the network, and support this.

- ZTE also support and think if needed, we can also define some neccesary SIBs to make the situation clear to the network,

- Samsung agrees with the ZTE proposal

P3

- LG think the prohibit timer is simpler, and with a unified implementation. Nokia would like to specify the UE behaviour. Prohibit timer. ZTE prefer to have the timer. Intel also support the prohibit timer. Ericsson support the timer. QC think prohibit timer is ok.

- CATT think UE implementation is sufficient. MTK agrees and think a NOTE is sufficient. A sensible implementation will not blindly repeat. Samsung think existing impl just use a note and we don’t need more for an exception case. Huawei think that RACH continuation is anyway up to UE impl, and this can be up to UE. Huawei think it is difficult for the network determine the value of the prohibit timer.

- Lenovo think that either way works, and think that if we do a prohibit timer we need more discussion, e.g. what about new request not identical to the preivous, Apple agrees with Lenovo.

- Samsung request that we agree now that the prohibit timer is per UE (not per SIB).

- Apple think that different service may trigger this, and timer may not applicable to new service requesting a differnet UE.

- LG think a single timer would be ok. Nokia would be ok.

P4

- SIB10 is NPN SIB.

- Lenovo think it may be needed. Huawei think UE in RRC connected might need this as the UE might do manual selection in RRC connected. Nokia think SIB10 is not needed in Connected.

- Chair: lets not decide anything now, can think about it.

P5

- Ericsson think that this is already handled in the TS. QC agrees but think we need to decide if the prohibit timer is reset. Ericsson agree that timer can be resent. Samsung agrees. MTK agrees as well. Apple

- ZTE want to clarify how this work.

- Chair: it seems the common understanding is that the UE reacquires SI in the new PCell including SIBs needed in connected, i.e. including SIBs delivered with this mechanism.

- LG think that the UE context will not contain the UE request SIB information. Ericsson agrees. Intel agrees as well.

* RAN2 to introduce an explicit indication within the *RRCReconfiguration* to enable/disable the on-demand SI feature in RRC\_CONNECTED. (if the UE is not allowed/network do not support, the network is responsible to deliver the SIB in some way anyway if the SIB is required).
* SIB12, SIB13, and SIB14 can be requested on-demand by UEs in RRC\_CONNECTED.
* We use a prohibit timer, per UE
* After at PCell change the prohibit timer is reset (the common understanding is that the UE reacquires SI in the new PCell including SIBs needed in connected, i.e. including SIBs delivered with this mechanism)
* Confirm that the UE context will not contain the UE request SIB information

CR

R2-2003205 Introduction of on-demand SIB in CONNECTED with positioning Ericsson draftCR Rel-16 38.331 16.0.0 B NR\_unlic-Core, 5G\_V2X\_NRSL-Core, NR\_IIOT-Core, LTE\_NR\_DC\_CA\_enh-Core, NR\_pos-Core

=> Revised in R2-2003787

R2-2003787 Introduction of on-demand SIB in CONNECTED with positioning Ericsson draftCR Rel-16 38.331 16.0.0 B NR\_unlic-Core, 5G\_V2X\_NRSL-Core, NR\_IIOT-Core, LTE\_NR\_DC\_CA\_enh-Core, NR\_pos-Core

=> Revised

R2-2003836 Introduction of on-demand SIB in CONNECTED with positioning Ericsson draftCR Rel-16 38.331 16.0.0 B NR\_unlic-Core, 5G\_V2X\_NRSL-Core, NR\_IIOT-Core, LTE\_NR\_DC\_CA\_enh-Core, NR\_pos-Core

* For email endorsement

R2-2004245 Summary of [AT109bis-e][056][OdSIBconn] Ondemand SI Open issue Ericsson

* [Post109bis-e][OdSIBconn] On demand SI Open issue (Ericsson)

Scope: RRC CR, taking R2-2003836, R2-2004245 and R2-2004209 into account.

Wanted outcome : endorsed CR 38331

Deadline: Short RRC

Other

Covered by Summary

R2-2002723 Remaining issues for on-demand system information MediaTek Inc. discussion Rel-16

R2-2002766 Repetition of on demand SI request following UE mobility ZTE Corporation, Sanechips discussion Rel-16

R2-2003070 Discussion on on-demand SI in RRC-CONNECTED Huawei, HiSilicon discussion Rel-16

R2-2003123 Requesting SIBs not supported in the cell Lenovo, Motorola Mobility discussion

R2-2003543 Remaining Issues of On Demand SI in RRC Connected Samsung R&D Institute India discussion

R2-2003582 Necessity of prohibt timer for SI request in connected mode. LG Electronics France discussion

ASN.1 issues and RRC Corrections

Those are found under AI 6.0.1.

## 6.22 Physical layer enhancements for NR ultra-reliable and low latency case URLLC

(NR\_L1enh\_URLLC-Core; leading WG: RAN1; REL-16; target; June 20; WID: [RP-1915](file:///C:\Data\3GPP\TSGR\TSGR_84\docs\RP-191563.zip)84; SR: RP-200090). Treated together with IIOT, AI 6.7. UL intra-UE prioritization and enhanced UL CG transmission should be discussed and addressed under RAN2 IIOT WI (do not submit under this AI), while the other objectives should be discussed under RAN2 eURLLC WI.

Time budget: 1 TU, will be treated together with IIOT.

Tdoc Limitation: 2 tdocs (for AI 6.22, or for 6.7 in addition to the tdoc limitation listed for 6.7)

### 6.22.1 Organizational

Running CRs etc

R2-2003613 Running CR for UE feature list for NR eURLLC Huawei, HiSilicon draftCR Rel-16 38.306 16.0.0 B NR\_L1enh\_URLLC-Core

R2-2003614 Running CR for UE feature list for NR eURLLC Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 B NR\_L1enh\_URLLC-Core

### 6.22.2 Control Plane

Initial Plan is to treat this AI by email. If difficult to converge, on-line treatment could be possible.

R2-2003617 Introduction of the new L1 parameters for eURLLC [H042][H044][H050] Huawei, HiSilicon discussion Rel-16 NR\_L1enh\_URLLC-Core

R2-2003615 Mapping between PUCCH resource ID and PUCCH Config for eURLLC Huawei, HiSilicon discussion Rel-16 NR\_L1enh\_URLLC-Core

R2-2003612 Running RRC CR by capturing updated L1 parameters for NR eURLLC Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 F NR\_L1enh\_URLLC-Core

R2-2003667 Draft 38.331 CR on L1 parameters LG Electronics draftCR Rel-16 38.331 16.0.0 B NR\_L1enh\_URLLC

* [AT109bis-e][057][URLLC] RRC L1 Configuration (Huawei)

Scope: Treat papers under 6.22.2,

Wanted outcome: Agreed-in-principle RRC CR,

Deadline: April 29 0700 UTC (rapporteur may introduce intermediate deadline if needed)

[R2-2004145](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004145.zip) Summary of RRC L1 Configurations for eURLLC Huawei, HiSilicon

* [057] Noted

[R2-2004146](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004146.zip) Correction to RRC spec for eURLLC Huawei, HiSilicon draftCR Rel-16 38.331 16.0.01 1588 B NR\_L1enh\_URLLC-Core

* [057] Endorsed

### 6.22.3 User Plane

Initial Plan is to treat this AI by email. If difficult to converge, on-line treatment could be possible.

R2-2002714 on MAC CE design for eURLLC Ericsson discussion NR\_L1enh\_URLLC-Core

R2-2003616 Remaining issues of MAC aspects for eURLLC Huawei, HiSilicon discussion Rel-16 NR\_L1enh\_URLLC-Core

* [AT109bis-e][058][URLLC] MAC remaining issues(Huawei)

Scope: Treat papers under 6.22.3, and the MAC impact from R2-2003612

Wanted outcome: Agreed-in-principle MAC CR,

Deadline: April 29 0700 UTC (rapporteur may introduce intermediate deadline if needed)

[R2-2004147](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004147.zip) Summary of MAC remaining issues for eURLLC Huawei, HiSilicon

* [058] Noted

Agreements Email [058]

* The determination of CG Type 1 occasion is based on the S from the indicated startSymbol for PUSCH repetition type B.
* The updates on section “Aperiodic CSI Trigger State Subselecton MAC CE” can be reverted to the Rel-15 version.
* RAN2 confirms that different PUCCH resource IDs are configured in different PUCCH-Config when two PUCCH-Configs are simultaneously configured in URLLC WI.
* Capture in MAC: For PUCCH spatial relation Activation/Deactivation MAC CE, Si: If, in *PUCCH-config* in which the PUCCH Resource ID is configured, there is a PUCCH Spatial Relation Info with *PUCCH-SpatialRelationInfoId* as specified in TS 38.331 [5].
* Capture in MAC: For Enhanced PUCCH spatial relation Activation/Deactivtion MAC CE, Spatial Relation Info ID: This field contains an identifier of the PUCCH Spatial Relation Info ID identified by *PUCCH-SpatialRelationInfoId*,in *PUCCH-Config* which the PUCCH Resource IDis configured.
* LS to RAN1 is not needed.

[R2-2004148](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2004148.zip) Correction to MAC spec for eURLLC Huawei, HiSilicon CR Rel-16 0734 36.321 16.0.0 F NR\_L1enh\_URLLC-Core

* [058] Endorsed

# 7 Rel-16 LTE Work Items

Documents in these agenda items will be handled in break out sessions

## 7.0 LTE Rel-16 General

### 7.0.1 ASN.1 review

Including outcome of the email discussion [Post109e#52][ASN.1] RRC ASN.1 review LTE specific (Samsung)

R2-2003231 General ASN.1 issues for 36.331 Rel-16 (S001- S006) Samsung Telecommunications discussion Rel-16 Late

R2-2003234 ASN.1 Review file (LTE) Samsung Telecommunications draftCR Rel-16 36.331 16.0.0 F TEI16 Late

R2-2003235 LTE Rel-16 ASN.1 Review, Class 0 and Class 1 issues Samsung Telecommunications report Rel-16 Late

R2-2003389 General ASN.1 issues for 36.331 Rel-16 (S001- S006) Samsung Telecommunications discussion Rel-16 Late Withdrawn

R2-2003392 ASN.1 Review file (LTE) Samsung Telecommunications draftCR Rel-16 36.331 16.0.0 F TEI16 Late Withdrawn

R2-2003393 LTE Rel-16 ASN.1 Review, Class 0 and Class 1 issues Samsung Telecommunications report Rel-16 Late Withdrawn

### 7.0.2 Features and UE capabilities

R2-2002550 LS on Rel-16 RAN1 UE features lists for LTE (R1-2001486; contact: NTT DOCOMO) RAN1 LS in Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core, LTE\_DL\_MIMO\_EE-Core, LTE\_terr\_bcast-Core To:RAN2; Cc:RAN4

## 7.1 Additional MTC enhancements for LTE

(LTE\_eMTC5-Core; leading WG: RAN1; REL-16; started: Jun 18; target; June 20; WID: [RP-191356](file:///C:\Data\3GPP\TSGR\TSGR_84\docs\RP-191356.zip); SR: RP-200309)

Time budget: 2.5 TU

Documents in this agenda item will be handled in a break out session

Some sub-items in 7.1 and 7.2 may be treated jointly.

One CR per specification will be provided by the corresponding rapporteur. No individual company CRs are expected. Companies should provide TPs when needed.

### 7.1.1 Organisational

Including incoming LSs, rapporteur inputs, running CRs.

A web conference may be used for handling some of the discussions in this AI.

R2-2002503 Reply LS on Mobile-terminated Early Data Transmission (C1-201062; contact: Ericsson) CT1 LS in Rel-15 LTE\_eMTC5-Core, NB\_IOTenh3-Core, 5G\_CIoT To:RAN2, SA2 Cc:CT4, RAN3, RAN, SA

R2-2002849 Miscellaneous Rel-16 eMTC corrections Qualcomm Incorporated CR Rel-16 36.331 16.0.0 4239 - F LTE\_eMTC5-Core

R2-2003351 Minor corrections and resolving Editor's Notes in TS36321 Ericsson discussion NB\_IOTenh3-Core, LTE\_eMTC5-Core

### 7.1.2 Mobile-terminated MT early data transmission EDT

MT Early Data transmission for MTC and NB-IoT is treated jointly under this AI.

This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on the submitted tdocs). A web conference may be used for handling the discussions in this AI.

### 7.1.3 Scheduling multiple DL/UL transport blocks

Scheduling multiple DL/UL transport blocks with or without DCI for SC-PTM and unicast. Scheduling multiple DL/UL transport blocks for MTC and NB-IoT is treated jointly under this AI.

This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on the submitted tdocs). A web conference may be used for handling the discussions in this AI.

R2-2003352 drx-InactivityTimer for LTE-M when scheduling multiple TBs Ericsson discussion LTE\_eMTC5-Core

### 7.1.4 Quality report in Msg3

This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on the submitted tdocs). A web conference may be used for handling the discussions in this AI.

R2-2003134 Solution for the short quality reporting for eMTC Ericsson discussion Rel-16

R2-2003182 Msg3 Quality report way forward on open issue Qualcomm Incorporated discussion Rel-16 LTE\_eMTC5-Core

R2-2003183 Introduce 2-bit CQI based on Solution 1 Qualcomm Incorporated draftCR Rel-16 36.321 16.0.0 LTE\_eMTC5-Core

R2-2003343 TP for 2-bit Quality report in Msg3 Huawei, HiSilicon discussion Rel-16 LTE\_eMTC5-Core

R2-2003785 Summary of Channel Quality report open issues Huawei discussion Rel-16 LTE\_eMTC5-Core

### 7.1.5 MPDCCH performance improvement using CRS

This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on the submitted tdocs). A web conference may be used for handling the discussions in this AI.

### 7.1.6 Improvements for non-BL UEs

CE mode A and B improvements for non-BL UEs among “enhancements to idle mode mobility”, “UE demodulation performance requirements for 2 RX antennas and full duplex FDD”, “Dual layer DL reception”, “Feedback based on CSI-RS”, “ETWS/CMAS in connected mode”

This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on submitted tdocs). A web conference may be used for handling the discussions in this AI.

R2-2002879 Non-BL UE in enhanced coverage mode in “normal” cell Intel Corporation discussion Rel-16 LTE\_eMTC5-Core

R2-2003344 Enhancements to idle mode mobility for non-BL UEs Huawei, HiSilicon discussion Rel-16 LTE\_eMTC5-Core

R2-2003353 S-Criterion interpretation for non-BL UEs Ericsson discussion LTE\_eMTC5-Core

R2-2003791 Summary of AI 7.1.6 Improvements for non-BL UEs Ericsson discussion Rel-16 LTE\_eMTC5-Core

### 7.1.7 Stand-alone deployment

Enable the use of LTE control channel region for DL transmission (MPDCCH/PDSCH) to BL/CE UEs

This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on the submitted tdocs). A web conference may be used for handling the discussions in this AI.

R2-2003354 Remaining issues for LTE-M standalone deployment Ericsson discussion LTE\_eMTC5-Core

R2-2003771 Finalization of TP for cell selection at standalone cell Nokia, Nokia Shanghai Bell discussion Rel-16 Late

R2-2003792 Summary of AI 7.1.7 Standalone operation Ericsson discussion Rel-16 LTE\_eMTC5-Core

### 7.1.8 Mobility Enhancements

Improving the DL RSRP and, RSRQ measurement accuracy, through use of RSS, relaxation of RRM measurements for serving cell for UEs using WUS for at least low mobility UEs

Including the outcome of [Post109e#05][eMTC R16] TP for RSS (Ericsson). A web conference may be used for handling the discussions in this AI. No contributions are expected for this AI. Please provide your input to the email discussion.

R2-2003138 Introduction of RSS Configurations Ericsson CR Rel-16 36.331 16.0.0 4246 - B LTE\_eMTC5-Core

R2-2003141 Report on Email discussion RSS Configurations Ericsson discussion Rel-16

R2-2003188 Permit early implementation of relaxed serving cell measurement Qualcomm Incorporated draftCR Rel-16 36.331 16.0.0 LTE\_eMTC5-Core Late

R2-2003814 Addressing FFSs for RSS configuration ZTE Corporation, Sanechips, Ericsson discussion Rel-16 LTE\_eMTC5-Core Late

### 7.1.9 Coexistence with NR

Study NR and LTE specifications to identify possible issues related to coexistence of MTC with NR

Coexistence with NR for MTC and NB-IoT is treated jointly under this AI. This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting. A web conference may be used for handling some of the discussions in this AI.

R2-2003477 Further discussion on NB-IoT coexistence with NR ZTE Corporation, Sanechips discussion Rel-16 NB\_IOTenh3-Core

R2-2003478 Further discussion on eMTC coexistence with NR ZTE Corporation, Sanechips discussion Rel-16 LTE\_eMTC5-Core

### 7.1.10 Connection to 5GC

Connection to 5GC for MTC and NB-IoT is treated jointly under this AI. This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on the submitted tdocs). A web conference of an offline discussion may be used for handling the discussions in this AI.

Includes [Post109e#47][NBIOT/EMTC] Connection to 5GC open issues (Qualcomm)

R2-2002607 Report for [Post109e#47][eMTC/NB-IoT] Connection to 5GC Open Issues Qualcomm India Pvt Ltd discussion Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core

R2-2002609 Idle Mode cell reselection based on CN type supported Qualcomm Incorporated, TurkCell discussion Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core R2-1914789

R2-2002610 Early UE capability retrieval enhancements for eMTC/5GC Qualcomm India Pvt Ltd discussion Rel-16 LTE\_eMTC5-Core R2-2000536

R2-2002611 [Draft] LS on early UE capability retrieval for eMTC connected to both EPC and 5GC Qualcomm India Pvt Ltd LS out Rel-16 LTE\_eMTC5-Core To:SA2 Cc:CT1, RAN3

R2-2002929 Draft reply LS on suspension indication to 5G NAS Qualcomm India Pvt Ltd LS out Rel-16 LTE\_eMTC5-Core To:CT1

R2-2003428 AS RAI and optimization of release Ericsson, LG Electronics Inc., Sony, Sierra Wireless, Thales, Lenovo, Motorola Mobility, MediaTek Inc., Turkcell discussion Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core R2-2001478

R2-2003430 LS on AS RAI and optimization of release Ericsson LS out Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core To:SA2 Cc:RAN3

R2-2003796 [Pre109bis-e][NBIOT/eMTC] Summary of eMTC/NB-IoT connected to 5GC Qualcomm discussion Rel-16 LTE\_eMTC5-Core

### 7.1.11 MTC UE capabilities

This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting (decision to be made based on the submitted tdocs). A web conference may be used for handling the discussions in this AI.

Includes [Post109e#16] [eMTC R16] 36.306 CR (Huawei)

R2-2003341 Update to UE capabilities for eMTC Huawei, HiSilicon CR Rel-16 36.306 16.0.0 1752 - C LTE\_eMTC5-Core Late

### 7.1.12 ASN.1 review MTC

*Including documents related to class 2/3 ASN.1 review issues that require WI-specific discussion. A web conference may be used for handling the discussions in this AI.*

R2-2002841 [Q501] Corrections to resumption of SRB1 in TS 36.331 subclause 5.3.3.3a Qualcomm Incorporated discussion Rel-16 LTE\_eMTC5-Core

R2-2003268 Capture AS context discard when CN type change ZTE Corporation, Sanechips draftCR Rel-16 36.331 16.0.0 LTE\_eMTC5-Core, NB\_IOTenh3-Core

R2-2003279 Correction on trigger for MT-EDT ZTE Corporation, Sanechips draftCR Rel-16 36.331 16.0.0 LTE\_eMTC5-Core, NB\_IOTenh3-Core

### 7.1.13 Other

MTC specific issues. This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting. A web conference may be used for handling some of the discussions in this AI.

R2-2003185 Interworking between Cat M and NR Qualcomm Incorporated discussion LTE\_eMTC5-Core

R2-2003186 Draft Reply LS on category M devices and NR Qualcomm Incorporated LS out LTE\_eMTC5-Core To:SA2

R2-2003187 Calrify interworking between Cat M and NR is not supported. Qualcomm Incorporated draftCR Rel-16 36.300 16.1.0 F LTE\_eMTC5-Core

## 7.2 Additional enhancements for NB-IoT

(NB\_IOTenh3-Core; leading WG: RAN1; REL-16; started: Jun 18; target; June 20; WID: RP-200293; SR: RP-200440)

Time budget: 2.5 TU

Documents in this agenda item will be handled in a break out session

Some sub-items in 7.1 and 7.2 may be treated jointly.

### 7.2.1 Organisational

Including incoming LSs, draft TS, rapporteur inputs, etc

A web conference will be used for handling some of the discussions in this AI.

One CR per specification will be provided by the corresponding rapporteur. No individual company CRs are expected. Companies should provide TPs when needed.

R2-2002587 RAN2 agreements for Rel-16 additional enhancements for NB-IoT and MTC Document Rapporteur (BlackBerry) other Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core

R2-2003249 Miscellaneous corrections to TS 36.300 for Rel-16 NB-IoT Huawei, HiSilicon CR Rel-16 36.300 16.1.0 1277 - F NB\_IOTenh3-Core

R2-2003744 Miscellaneous corrections to 36.331 for Rel-16 NB-IoT Huawei, HiSilicon CR Rel-16 36.331 16.0.0 4287 - F NB\_IOTenh3-Core Late

R2-2003745 Miscellaneous corrections to 36.302 for Rel-16 NB-IoT Huawei, HiSilicon CR Rel-16 36.302 16.0.0 1209 - F NB\_IOTenh3-Core Late

### 7.2.2 UE-group wake-up signal WUS

UE group wake Up signal for MTC and NB-IoT is treated jointly under this Agenda Item.

A web conference will be used for handling some of the discussions in this AI.

Includes [Post109e#32][NBIOT/EMTC] Finalise the 36.304 Text for WUS (Nokia)

Includes [Post109e#45][NBIOT/EMTC] WUS open issues (Ericsson)

All identified critical open issues should be provided to the rapporteur via email discussion Post109e#45 and new contributions on those topics are discouraged.

R2-2002671 On supporting UE group WUS operation with mobility Sony discussion Rel-16 NB\_IOTenh3-Core

R2-2003101 Consideration on WUS paging probability parameter Lenovo, Motorola Mobility discussion Rel-16

R2-2003102 Group WUS for mobile UE Lenovo, Motorola Mobility discussion Rel-16

R2-2003184 Clarification of WUS resource configuration Qualcomm Incorporated draftCR Rel-16 36.331 16.0.0 LTE\_eMTC5-Core

R2-2003328 E-mail-Discussion-Summary for Post109e-32 : Finalise TP for TS36.304 for WUS Nokia, Nokia Shanghai Bell discussion Rel-16

R2-2003329 Draft TP for TS36.304 Nokia, Nokia Shanghai Bell discussion Rel-16

R2-2003431 Report - Email discussion [Post109e#45][NB-IoT/eMTC] WUS open issues Ericsson discussion Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core Late

R2-2003485 Formula for WUS group selection ZTE Corporation, Sanechips discussion Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core

R2-2003741 Signalling changes for GWUS Resource mapping for eMTC Nokia Solutions & Networks (I) discussion Rel-16

### 7.2.3 Transmission in preconfigured resources

Transmission in preconfigured resources for MTC and NB-IoT is treated jointly under this Agenda Item.

A web conference will be used for handling some of the discussions in this AI.

Includes [Post109e#46][NBIOT/EMTC] PUR open issues (Huawei)

All identified critical open issues should be provided to the rapporteur via email discussions Post109e#46 and new contributions on those topics are discouraged.

R2-2003257 Complete the HARQ process for PUR ZTE Corporation, Sanechips draftCR Rel-16 36.321 16.0.0 NB\_IOTenh3-Core, LTE\_eMTC5-Core

R2-2003258 Correction on successful PUR transmission indication ZTE Corporation, Sanechips draftCR Rel-16 36.321 16.0.0 LTE\_eMTC5-Core, NB\_IOTenh3-Core

R2-2003267 Correction on TA timer maintenance ZTE Corporation, Sanechips draftCR Rel-16 36.321 16.0.0 LTE\_eMTC5-Core, NB\_IOTenh3-Core

R2-2003278 Capture RRC setup using PUR ZTE Corporation, Sanechips draftCR Rel-16 36.331 16.0.0 LTE\_eMTC5-Core, NB\_IOTenh3-Core

R2-2003331 Security Aspects of PUR Configuration for CP Nokia, Nokia Shanghai Bell discussion

R2-2003355 Moving UL grant handling from MAC to RRC for PUR Ericsson, Huawei, HiSilicon discussion NB\_IOTenh3-Core, LTE\_eMTC5-Core

R2-2003415 TA validation based on serving cell RSRP change (related to RAN4 LSes) Sierra Wireless, S.A. discussion Rel-16 R2-2000443

R2-2003429 Configuration and adjustment of repetition number Sierra Wireless, S.A. discussion Rel-16

R2-2003652 Remaining issues of D-PUR TA timer in MAC ASUSTeK discussion Rel-16 38.321 NB\_IOTenh3-Core

R2-2003653 PUR configuration maintenance during RRC state transition ASUSTeK discussion Rel-16 36.331 NB\_IOTenh3-Core

R2-2003746 Report of email discussion [Post109e#46][NBIOT/EMTC] PUR open issues Huawei report Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core Late

### 7.2.4 NB-IoT Specific

NB-IoT specific topics

This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting.

A web conference will be used for handling some of the discussions in this AI.

Includes [Post109e#15][NBIOT] UE specific DRX: DRX cycle values (Sequans)

R2-2003131 To Verify ANR Measurements Ericsson, Nokia, Nokia Shanghai Bell, ZTE Corporation discussion Rel-16

R2-2003133 Logging of CE Level for RLF and ANR measurements Ericsson discussion Rel-16

R2-2003139 Draft LS to RAN4 on ANR Measurements Ericsson [To be RAN2] LS out Rel-16 NB\_IOTenh3-Core To:RAN4

R2-2003247 SON remaining issues Huawei, HiSilicon discussion Rel-16 NB\_IOTenh3-Core

R2-2003291 Remaining FFSs for SON in NB-IoT ZTE Corporation, Sanechips discussion Rel-16 NB\_IOTenh3-Core

R2-2003669 Report of [Post109e#15][NBIOT] UE specific DRX DRX cycle values Sequans Communications discussion Rel-16 NB\_IOTenh3-Core

R2-2003747 Introduction of UE specific DRX for NB-IoT Huawei, HiSilicon, MediaTek, CMCC, China Unicom, Ericsson, Lenovo, Motorola Mobility discussion Rel-16 NB\_IOTenh3-Core

=> Revised in R2-2003780

R2-2003780 Introduction of UE specific DRX for NB-IoT Huawei, HiSilicon, MediaTek, CMCC, China Unicom, Ericsson, Lenovo, Motorola Mobility, Vodafone discussion Rel-16 NB\_IOTenh3-Core

=> Revised in R2-2003815

R2-2003815 Introduction of UE specific DRX for NB-IoT Huawei, HiSilicon, MediaTek, CMCC, China Unicom, Ericsson, Lenovo, Motorola Mobility, Vodafone, China Telecom discussion Rel-16 NB\_IOTenh3-Core

R2-2003748 [Draft] Reply LS on Rel-16 NB-IoT enhancements Huawei LS out Rel-16 NB\_IOTenh3-Core To:CT1, RAN3 Cc:SA2

R2-2003749 [Draft] LS on UE specific DRX in NB-IoT Huawei LS out Rel-16 NB\_IOTenh3-Core To:RAN4

R2-2003786 Summary of SON/ANR open issues Huawei discussion Rel-16 NB\_IOTenh3-Core

### 7.2.5 NB-IoT UE capabilities

This agenda item may utilize a summary document to facilitate treatment of topics during the e-meeting.

A web conference will be used for handling some of the discussions in this AI.

Includes [Post109e#14][NBIOT] 36.306 CR (Blackberry)

R2-2002588 Updates for Rel-16 additional enhancements NB-IoT BlackBerry UK Limited CR Rel-16 36.306 16.0.0 1746 - C NB\_IOTenh3-Core Late

R2-2003248 UE capabilities, TDD/FDD differentiation and 5GC applicability for NB-IoT and eMTC Huawei, HiSilicon discussion Rel-16 NB\_IOTenh3-Core, LTE\_eMTC5-Core

### 7.2.6 ASN.1 review of NB-IoT

*Including documents related to Class 2/3 ASN.1 review issues that require WI-specific discussion.*

A web conference will be used for handling some of the discussions in this AI.

R2-2003250 [H108][H109] TP on WUS sugnalling for per gap configuration Huawei, HiSilicon discussion Rel-16 NB\_IOTenh3-Core, LTE\_eMTC5-Core Late

R2-2003251 [H228][H229] TP on multipe TB schedullng in NB-IoT Huawei, HiSilicon discussion Rel-16 NB\_IOTenh3-Core Late

## 7.3 Even further mobility enhancement in E-UTRAN

(LTE\_feMob-Core; leading WG: RAN2; REL-16; started: Jun 18; target; Mar 20; WID: RP-190921)

No documents should be submitted to 7.3.

Treated together with 6.9,

A web conference may be used for handling some of the discussions in this WI, and summary document may be provided for some agenda items under 7.3.

### 7.3.1 Organizational

Including incoming LSs and rapporteur inputs (if any).

R2-2003262 36300CR for Introduction of Even futher Mobility enhancement in E-UTRAN ChinaTelecom CR Rel-16 36.300 16.1.0 1278 - B LTE\_feMob

R2-2003263 UE Capability for Rel-16 LTE even further mobility enhancement ChinaTelecom CR Rel-16 36.306 16.0.0 1751 - B LTE\_feMob Late

R2-2003370 UE Capability for Rel-16 LTE even further mobility enhancement Intel Corporation draftCR Rel-16 36.331 16.0.0 LTE\_feMob-Core

R2-2003777 Correction on introduction of DAPS handover China Telecommunications CR Rel-16 36.300 16.1.0 1279 - B LTE\_feMob Late

### 7.3.2 Reduction in user data interruption for dual active protocol stack DAPS handover

DAPS handovers for LTE and NR are treated jointly in under this AI.

No documents should be submitted to 7.3.2. Please submit to 7.3.2.x.

#### 7.3.2.1 Open issues and corrections for user plane aspects of DAPS HO

Including document on user plane-related open issues and corrections for DAPS HO.

*Including UP-related outcome of email discussion [Post109e#11][MOB] Resolving open issues for DAPS (Intel)*

Contributions on issues already resolved by the email discussion Post109e#11][MOB] are discouraged.

Tdoc Limitation per company: 1 tdoc

R2-2002590 Open issues for user plane aspects of DAPS HO Ericsson discussion Rel-16 NR\_Mob\_enh-Core

R2-2002608 PDCP Status Reporting enhancements for DAPS DRBs Qualcomm India Pvt Ltd discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

R2-2002737 PDCP Status Report for UM DRBs in DAPS HO MediaTek Inc. discussion

R2-2002864 Handling of compressed PDCP SDUs stored in reception buffer LG Electronics Inc. discussion LTE\_feMob-Core

R2-2002868 CR on 36.321 for LTE feMob vivo CR Rel-16 36.321 16.0.0 1468 - F LTE\_feMob-Core

R2-2002869 CR on 38.321 for NR mobility enhancement vivo CR Rel-16 38.321 16.0.0 0710 - F NR\_Mob\_enh-Core

R2-2002874 Remaining user plane issues of DAPS vivo discussion Rel-16 LTE\_feMob-Core

R2-2002953 Discussion on PDCP status report for UM DRB OPPO discussion Rel-16 NR\_Mob\_enh-Core

R2-2002997 Handling of security issue for DAPS without key change NEC discussion Rel-16 LTE\_feMob-Core

R2-2003045 Discussion on transmitting ROHC IR packets in target during DAPS HO Huawei, HiSilicon, Vivo, Oppo, NEC, Apple, NTT DOCOMO INC., China Telecom discussion Rel-16 LTE\_feMob-Core

R2-2003330 On Remaining Issues for DAPS UP Nokia, Nokia Shanghai Bell discussion Rel-16

R2-2003665 RoHC handling for inter-gNB and intra-gNB DAPS handover SHARP Corporation discussion Rel-16 LTE\_feMob-Core

#### 7.3.2.2 Open issues and corrections for control plane aspects of DAPS HO

Including document on control plane-related open issues and corrections for DAPS HO other than UE capabilities.

*Including CP-related outcome of email discussion [Post109e#11][MOB] Resolving open issues for DAPS (Intel).*

Contributions on issues already resolved by the email discussion Post109e#11][MOB] are discouraged.

Tdoc Limitation per company: 1 tdoc

R2-2002591 Subsequent RRC Procedures after DAPS handover Ericsson discussion Rel-16 NR\_Mob\_enh-Core

R2-2002860 Clean up the terminology for RRC and PDCP LG Electronics Inc, Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

R2-2002875 Remaining control plane issues of DAPS vivo discussion Rel-16 LTE\_feMob-Core

R2-2002952 Correction on DAPS HO OPPO draftCR Rel-16 38.331 16.0.0 F NR\_Mob\_enh-Core

R2-2003046 Discussion on control plane aspects of DAPS HO Huawei, HiSilicon discussion Rel-16 LTE\_feMob-Core

R2-2003108 Remaining control plane issues for DAPS Nokia, Nokia Shanghai Bell discussion Rel-16 LTE\_feMob-Core

R2-2003371 Report of 109b#11 open issues on DAPS Intel Corporation discussion Rel-16 LTE\_feMob-Core, NR\_Mob\_enh-Core

R2-2003372 38.331 CR on NR MOB Intel Corporation draftCR Rel-16 38.331 16.0.0 NR\_Mob\_enh-Core

R2-2003502 Discussion on network coordination and PHR report for DAPS HO CMCC. discussion Rel-16 LTE\_feMob-Core

R2-2003530 Indication of DAPS Handover Execution to the Source ETRI discussion Rel-16 LTE\_feMob-Core, NR\_Mob\_enh-Core

#### 7.3.2.3 UE capabilities for DAPS HO

*Including any UE capability aspects triggered by RAN1/4 or related to existing RAN2 UE capability discussions of DAPS (for both LTE and NR).*

*The documents in this agenda item may be deprioritized in this meeting or used as input to post-meeting email discussion(s).*

Tdoc Limitation per company: 1 tdoc

R2-2002592 Inter-node signalling for DAPS handover Ericsson discussion Rel-16 NR\_Mob\_enh-Core

R2-2002905 Consideration on DAPS Capability LG Electronics Inc. discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

R2-2003030 UE capabilities for DAPS Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core Late

R2-2003047 Discussion on open issues for UE capability coordination Huawei, HiSilicon discussion Rel-16 LTE\_feMob-Core

R2-2003367 Discussion on capabilities for MOB Intel Corporation discussion Rel-16 LTE\_feMob-Core, NR\_Mob\_enh-Core

### 7.3.3 Conditional handover

*Contributions on conditional handover for LTE and NR are treated jointly in under 6.9.3. Do not use this AI for any item that can be discussed jointly.*

Tdoc Limitation per company: 0 tdoc.

### 7.3.4 ASN.1 review of mobility WIs for LTE RRC

*Including documents related to Class 3 ASN.1 review issues.*

*This agenda item focuses on* ***LTE RRC*** *aspects of both LTE and NR mobility WIs – NR RRC aspects of both LTE and NR mobility WIs should be submitted to 6.9.5. Do not submit contributions on WI-specific open issues that are not captured in the current LTE RRC to this agenda item.*

R2-2003040 Correction CR for conditional handover including RIL E901 Ericsson CR Rel-16 36.331 16.0.0 4243 - F LTE\_feMob-Core

## 7.4 Further performance enhancement for LTE in high speed scenario

(LTE\_high\_speed\_enh2-Core; leading WG: RAN4; REL-16; started: Jun 18; target; Sep 19; WID: RP-181482)

Time budget: 0 TU.

This item is 100%

Only documents related to Class 3 ASN.1 review issues should be submitted.

This agenda item will be treated fuily over email - No web conference is planned for this agenda item.

## 7.5 Other LTE Rel-16 WIs

This agenda item is to be used for LSs and documents relating to Rel-16 LTE but for which there is no existing RAN WI/SI (e.g. LSs from CT/SA requesting RAN2 action) or for which there is no allocated RAN2 time.

Including documents related to Class 3 ASN.1 review issues.

A joint summary document of 7.5 and 7.6 may be provided by session chair.

## 7.6 LTE TEI16 enhancements

Small Technical Enhancements to LTE. TEI should be predominantly within a single WG and fully completed within the same quarter in all affected WGs. RAN2 impact of RAN1/4-led TEI shall be limited to RRC signalling of configuration parameters and UE capabilities (no MAC impact, no RRC procedural impact, etc). Please also see RP-191602 endorsed at RAN#84.

Time budget: 1 TU

Including documents related to Class 3 ASN.1 review issues. New TEI16 proposals are discouraged and may be deprioritized in this meeting.

A joint summary document of 7.5 and 7.6 may be provided by session chair.

R2-2002887 CR on RLC out-of-order delivery configuration Samsung, LG Electronics Inc., Nokia, Nokia Shanghai Bell, Intel, Apple CR Rel-16 36.331 16.0.0 4240 - F TEI16

R2-2002888 LTE RLC out-of-order delivery configuration Samsung, LG Electronics Inc., Nokia, Nokia Shanghai Bell, Intel, Apple discussion TEI16

R2-2003842 Summary of LTE contributions in AIs 7.4, 7.5, 7.6, 7.8 and 7.9 Nokia (RAN2 vice-chair) discussion Late

## 7.7 Support of Indian Navigation Satellite System NavIC

(LCS\_NAVIC; leading WG: RAN2; REL-16; started: Sept 19; target; March-20; WID: RP-192350)

Time budget: 0 TU Final agreement of CRs is expected

This item is 100%

R2-2003821 [CR to add IE NavModel-NavIC-KeplerianSet] Introduction of UE capabilities for DL MIMO efficiency enhancement Reliance Jio CR Rel-16 37.355 16.0.0 0257 - F LCS\_NAVIC-Core

## 7.8 DL MIMO efficiency enhancements for LTE

(LTE\_DL\_MIMO\_EE-Core; leading WG: RAN1; REL-16;target; March-20; WID: RP-182901)

Time budget: 0.5 TU

This item is 100%

This agenda item will be treated fuily over email - No web conference is planned for this agenda item.

Only documents related to Class 3 ASN.1 review issues should be submitted.

R2-2003546 Introduction of UE capabilities for DL MIMO efficiency enhancement Huawei, Hisilicon CR Rel-16 36.331 16.0.0 4272 - F LTE\_DL\_MIMO\_EE-Core

R2-2003547 Introduction of UE capabilities for DL MIMO efficiency enhancement Huawei, Hisilicon CR Rel-16 36.306 16.0.0 1756 - F LTE\_DL\_MIMO\_EE-Core

## 7.9 LTE-based 5G Terrestrial Broadcast

(LTE\_terr\_bcast-Core; leading WG: RAN1; REL-16; target; March-20; WID: RP-182924)

Time budget: 0.5 TU.

This item is 100%

This agenda item will be treated fuily over email - No web conference is planned for this agenda item.

Only documents related to Class 3 ASN.1 review issues should be submitted.

R2-2003364 Correction on the configuration of subframe #0 and #5 for MCH in MBMS dedicated cell Qualcomm Technologies Int CR Rel-16 36.331 16.0.0 4259 - F LTE\_terr\_bcast-Core

R2-2003544 Discussion on MCCH configuration for 0.37kHz SCS Huawei, Hisilicon discussion

R2-2003545 Clarification on MCCH configuration for 0.37kHz SCS Huawei, Hisilicon CR Rel-16 36.331 16.0.0 4271 - F LTE\_terr\_bcast-Core

# 8 Breakout session reports

No documents shall be submitted to this AI or its sub-AIs. It is only for at-meeting-generated contents.

Breakout session reports will be approved by email.

### 8.1 Session on LTE legacy, LTE TEI16 and NR/LTE Rel-16 Mobility

R2-2003801 Report from session on LTE legacy, LTE TEI16 and NR/LTE Rel-16 Mobility Vice Chairman (Nokia) report

### 8.2 Session on SRVCC, CLI, PRN, eMIMO, RACS

R2-2003802 Report from Break-Out Session on SRVCC, CLI, PRN, eMIMO, RACS Vice Chairman (ZTE) report

### 8.3 Session on eMTC

R2-2003803 Report eMTC breakout session Session chair (Ericsson) report

### 8.4 Session on NR-U, Power Savings, NTN and 2-step RACH

R2-2003804 Session minutes for NR-U, Power Savings, NTN and 2-step RACH Session chair (InterDigital) report

### 8.5 Session on Rel-15 and 16 LTE and NR positioning

R2-2003805 Report from session on Rel-15 and 16 LTE and NR positioning Session chair (MediaTek) report

### 8.6 Session on SON/MDT

R2-2003806 Report from SOM/MDT session Session chair (CMCC) report

### 8.7 Session on NB-IoT

R2-2003807 Report NB-IoT breakout session Session chair (Huawei) report

### 8.8 Session on LTE V2X and NR V2X

R2-2003808 Report from session on LTE V2X and NR V2X Session chair (Samsung) report