3GPP TSG-RAN WG2 Meeting #109bis-e [R2-2003801](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003801.zip)

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

**Agenda Item: 8.1**

**Source: Vice Chairman (Nokia)**

**Title: Report on LTE legacy, LTE TEI16 and NR/LTE Rel-16 Mobility topics**

**General**

# 2 General

**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 [Post109bis-e#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.

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| **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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2001709.zip) 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.

Recording of voice or video at meetings is not used in 3GPP. This applies also to this e-Meeting. At this e-Meeting, no specific actions are taken to prevent the recording of web conferences. Companies that have concerns related to recordings, if any, may express those by email in the main meeting organizational thread [AT109bis-e][000].

**Organizational**

* LSs – contact companies should flag LSs that need presenting. Otherwise we will directly note them. See each session guidelines for how to present LSs.
* Running CRs will be endorsed to be used as baseline and moved to email discussion. Further agreements will be captured on that baseline CR and further comments can only be provided online. Rapporteurs should flag if there is a big issue that needs to be discussed before the meeting
* Only Email discussions and summary discussions will be treated during web conferences, unless specifically announced before the web conference. Topics handled in web conferences will also be indicated clearly in the meeting notes.
* All organization emails and notes will be shared over the following email discussion throughout the two meeting weeks:
* [AT109bis-e][200] Organizational Tero – LTE legacy, LTE Rel-16 and LTE/NR mobility

Scope:

* + - Share plans for the meetings and list of ongoing email discussions for the sessions related to following agenda items: 4.5 LTE corrections, 6.9 NR Mobility, 7.0.x ASN.1 and UE capabilities for LTE Rel-16, 7.3 EUTRA Mobility, 7.4 EUTRA high-speed, 7.5 LTE Other, 7.6 TEI16, 7.8 LTE DL MIMO and 7.9 LTE Terrestrial Broadcast
    - Share meetings notes and agreements for review and endorsement
    - Treat flagged LSs (if any), respond to questions related to them and identify if response LSs are needed for the flagged LSs

Intended outcome (for LS discussion):

* + - Agreements on how to proceed with any given LS (e.g. whether dedicated email discussion is needed to discuss the response LS)
    - Updated meeting notes based on web conferences and email discussions

Deadline for providing comments to LSs:

* + - Company inputs: Tuesday, Apr 21st 12:00 UTC
    - Discussions on LSs: Wednesday, Apr. 22nd 12:00 UTC (one day after comment deadline)

Status: Started

**Web Conference Schedule**

Note that this schedule is indicative and can change. Changes to the schedule will be announced with notice of at least 24h.

Note: Web conferences handled in this document highlighted in yellow.

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| **Time Zone UTC** | **Web Conference R2 Main** | **Web Conference R2 BO1** | **Web Conference R2 BO2** |
| **Monday 20** |  |  |  |
| 12:00 – 13:30 | [6.0.1] NR ASN.1 review | [6.2] NR Unlic (Diana) | [4.1][4.2] IoT R15 and earlier (Brian/Emre)  [7.1][7.2] IoT R16 (Brian/Emre) |
| 13:30 – 15:00 | [6.10] DC/CA enh | [4.4 ] LTE Pos R15 and earlier (Nathan)  [5.2.3] NR Pos Corrections (Nathan)  [6.8] NR Pos (Nathan) | [6.12] SON/MDT in NR (Hu Nan) |
| **Tuesday 21** |  |  |  |
| 12:00 – 13:30 | [6.1] NR IAB | [6.18] PRN (Sergio)  [6.15] CLI (Sergio) | [7.0.1] LTE ASN.1 review (not NB-ioT/MTC) |
| 13:30 – 15:00 | [6.7][6.22] I-IoT, URLLC | [6.4] NR V2X (Kyeongin)  [4.3] LTE V2X R15 and earlier (Kyeongin) | [6.9][7.3] NR & LTE mobility enhancements (Tero) |
| **Wednesd 22** |  |  |  |
| 12:00 – 13:30 | [5.4] NR CP corrections | [6.11] NR power saving (Diana) | [6.8] NR Pos (Nathan) |
| 13:30 – 15:00 | [6.0.1] NR ASN.1 review | [6.13] 2 step RACH [1] (Diana) | [7.1][7.2] IoT R16 (Brian/Emre) |
| **Thursday 23** |  |  |  |
| 04:00 – 05:30 | [6.21] On dem SI in connected  [6.19] NR Inc LS  [6.20] NR TEI16 | [6.4] NR V2X (Kyeongin) | [6.9][7.3] NR & LTE mobility enhancements (Tero) |
| **Friday 24** |  |  |  |
| 04:00 – 05:30 | [6.0.1] NR ASN.1 review | [6.16] eMIMO (Sergio) | [7.1][7.2] IoT R16 [5] (Brian/Emre) |

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| **Time Zone UTC** | **Web Conference R2 Main** | **Web Conference R2 BO1** | **Web Conference R2 BO2** |
| **Monday 27** |  |  |  |
| 13:00 – 14:30 | [6.1] NR IAB or  [5] NR corrections | [6.11] NR power saving (Diana)  [6.13] 2 step RACH (Diana) | [6.9][7.3] NR & LTE mobility enhancements (Tero) |
| 14:30 – 16:00 | [6.0.1] NR ASN.1 review | [6.2] NR Unlic (Diana) | [6.18] PRN (Sergio) |
| **Tuesday 28** |  |  |  |
| 13:00 – 14:30 | [6.10] DC/CA enh | [6.4] NR V2X (Kyeongin) | [7.1][7.2] IoT R16 (Brian/Emre) |
| 14:30 – 16:00 | [6.7][6.22] I-IoT, URLLC | [6.4] NR V2X (Kyeongin) | [7.0.1] LTE ASN.1 review |
| **Wednesd 29** |  |  |  |
| 13:00 – 14:30 | [6.0.1] NR ASN.1 review | [6.16] eMIMO (Sergio) | [7.1][7.2] IoT R16 (Brian/Emre) |
| 14:30 – 16:00 | [6.0.2] UE cap maybe  TBD | [6.12] SON/MDT in NR (Hu Nan) | [4.4][5.4][6.8][7.7][6.20] Positioning (Nathan) |
| **Thursday 30** |  |  |  |
| 03:30-05:00 | [6.0.1, 7.0.1] NR and EUTRA ASN.1 review | TBD | [7.1][7.2] IoT R16 (Brian/Emre) (if needed) |

**LTE legacy and LTE Rel-16 topics**

**These topics are all only treated over email – no web conference is planned (see discussions 201-203).**

* Only flagged LSs treated (flagging to be done via **Email discussion** 200)
* CRs are agreed in principle over email where possible.

**LTE ASN.1 review (other than NB-IoT and MTC)**

**Tuesday April 21st, 12:00 – 13:30 UTC**

* Treat outcome of email discussion [post109bis-e#52] [Post109bis-e#52][ASN.1] 36331 ASN.1 review EUTRA (Samsung)
* Go through selected review issues (starting from the most important one)
* Assign offline email discussions to resolve remaining ASN.1 issues until 2nd week (i.e. deadline: Tuesday April 28th)

**Tuesday April 28th, 14:30 – 16:00 UTC**

* Endorse outcome of concluded offline email discussions
* Go through remaining review issues (starting from the most important one)
* Determine how to resolve remaining ASN.1 issues (i.e. can some be postponed to next meeting or handled during the remaining two days)

**LTE/NR mobility**

**Tuesday April 21st, 13:30 – 15:00 UTC**

* Treat flagged LS (i.e. according to flagging done in **email discussion** **200**)
* Handle email discussion outcomes as follows:
  + [Post109bis-e#11][MOB] Resolving open issues for DAPS (Intel)
  + If time allows, start also [Post109bis-e#12][MOB] Resolving open issues for CHO (Nokia)

**Thursday, April 23rd 04:00– 5:30 UTC**

* Handle email discussion outcomes as follows:
  + [Post109bis-e#12][MOB] Resolving open issues for CHO (Nokia)
  + If time allows, start also [Post109bis-e#13][NR MOB] Resolving open issues for CPC (CATT)
* If time allows, most important topics from ongoing offline email discussionsmay also be treated selectively (to be announced prior to the web conference)

**Monday, April 27th, 13:30 – 15:00 UTC**

* Handle (if needed) the remainder of [Post109bis-e#13][NR MOB] Resolving open issues for CPC (CATT)
* If time allows, most important topics from ongoing offline email discussionsmay also be treated selectively (to be announced prior to the web conference)
* UE capability discussion may be discussed if time allows

**List of offline email discussions:**

*NOTE: The official kickoff date for these email discussions are Monday 20th, however the rapporteurs can send them before this date and companies are welcome to participate before (but do not have to until the official kick off on Monday, April 20th)*

**NOTE: the email discussion deadlines are meant to allow at least all regions to have one day to comment (other than weekend) and also give rapporteurs time to update their proposals before the meeting)**

**LTE Legacy**

* [AT109bis-e][201][LTE15] Simple LTE legacy CRs (RAN2 VC)

Scope:

* + - Attempt to agree to CRs in [R2-2003451](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003451.zip), [R2-2003452](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003452.zip), [R2-2003453](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003453.zip), [R2-2003232](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003232.zip), [R2-2003233](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003233.zip), [R2-2002619](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002619.zip) and [R2-2002620](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002620.zip).

Intended outcome:

* + - Discussion summary in [R2-2003841](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003841.zip) (by email rapporteur), including list of CRs are agreed or moved to discussion **202** (for further discussion)
    - Agreeable CRs (by each CR proponent)

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Wednesday 2020-04-22 16:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003841](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003841.zip)): Friday 2020-04-23 12:00 UTC
    - Proposed agreements in [R2-2003841](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003841.zip) indicated for email agreement and not challenged until Tuessday 2020-04-27 18:00 UTC will be declared as agreed by the session chair.

Status: Started

* [AT109bis-e][202][LTE15] Other LTE legacy CRs (RAN2 VC)

Scope:

* + - Discuss the CRs in [R2-2003147](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003147.zip), [R2-2003148](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003148.zip), [R2-2003149](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003149.zip), [R2-2003150](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003150.zip), [R2-2003151](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003151.zip) and [R2-2003548](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003548.zip), [R2-2003549](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003549.zip), [R2-2003550](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003550.zip), [R2-2003551](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003551.zip), [R2-2003552](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003552.zip), [R2-2003553](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003553.zip), [R2-2003554](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003554.zip), to determine what to capture in specifications and from which release onwards.
    - Discuss the CRs [R2-2003152](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003152.zip), [R2-2003153](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003153.zip), [R2-2003154](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003154.zip) to determine if the interpretation is correct and how a correction should be captured (if needed).
    - Handle any CRs from discussion **201** as necessary

Intended outcome:

* + - Discussion summary in [R2-2003841](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003841.zip), detailing which CRs (if any) can be agreed and recording the summary of offline discussions comments
    - For CRs that can be agreed, final CRs (by CR proponents)

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Thursday 2020-04-23 12:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003841](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003841.zip)): Friday 2020-04-24 12:00 UTC
    - Proposed agreements in [R2-2003841](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003841.zip) indicated for email agreement and not challenged until Tuesday 2020-04-28 18:00 UTC will be declared as agreed by the session chair.

Status: Started

**LTE Rel-16**

* [AT109bis-e][203][LTE16] LTE Rel-16 CR discussion (RAN2 VC)

Scope:

* + - Covering discussion of contributions in AIs 7.4, 7.5, 7.6, 7.8 and 7.9
    - Discuss whether the CRs in [R2-2003546](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003546.zip), [R2-2003547](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003547.zip) can be endorsed as baseline for UE capabilities of DL MIMO efficiency enhancements for LTE.
    - Discuss if the intent of [R2-2002888](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002888.zip) is agreeable. If needed, provided updated revision to CR [R2-2002887](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002887.zip).
    - Discuss which approach can resolve the identified problem: Re-interpretation of existing signalling ([R2-2003545](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003545.zip)) or addition of new signalling ([R2-2003364](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003364.zip)).

Intended outcome:

* + - Discussion summary document in [R2-2003842](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003842.zip), detailing which CRs can be agreed in principle and summary of offline discussion comments
    - Final versions of in-principle agreeable CRs (by each CR proponent)

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Thursday 2020-04-23 12:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003842](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003842.zip)): Friday 2020-04-24 12:00 UTC
    - Proposed agreements in [R2-2003842](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003842.zip) indicated for email agreement and not challenged until Tuesday 2020-04-28 18:00 UTC will be declared as agreed by the session chair.

Status: Started

**LTE ASN.1 review**

* [AT109bis-e][204][LTE ASN1] LTE general ASN.1 discussion (Samsung)

Scope:

* + - General ASN.1 issue discussion covering AI 7.0.1 according to ASN.1 review issue list.
    - Flagging issues for discussion during the LTE ASN.1 web conference session(s) via email before the session(s)

Intended outcome:

* + - Discussion summary document in [R2-2003843](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003843.zip), detailing the proposals for ASN.1 issue resolution (including ASN.1 changes).
    - Combined CR with the agreed changes on general ASN.1 for LTE

Deadline for providing comments and for rapporteur inputs:

* + - Flagging review issues for discussion in the 1st ASN.1 session: Tuesday Apr. 21st, 8:00 UTC
    - Flagging review issues for discussion in the 2nd ASN.1 session: Mondday Apr. 27th, 8:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003843](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003843.zip)): Friday 2020-04-24 08:00 UTC
    - Proposed agreements in [R2-2003843](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003843.zip) indicated for email agreement and not challenged until Tuesday 2020-04-28 12:00 UTC will be declared as agreed by the session chair.

Status: Started

* [AT109bis-e][210][MOB ASN1] ASN.1 discussion for LTE and NR mobility (Intel/Ericsson)

Scope:

* + - Handling per-WI issues raised in ASN.1 review, including handling contributions submitted to the meeting on ASN.1 issues.
    - Flagging issues for discussion during Web conference (for either the 1st or 2nd week Web conferences)

Intended outcome:

* + - Discussion summary document in [R2-2003844](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003844.zip), including proposals for ASN.1 issue resolution (including ASN.1 changes) and summary of discussions.
    - CR issues to be handled via CR email discussions

Deadline for providing comments and for rapporteur inputs:

* + - Flagging review issues for the ASN.1 discussion: Friday 2020-04-24, 12:00 UTC
    - Initial deadline (for companies' feedback): Friday 2020-04-24 12:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003844](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003844.zip)): Monday 2020-04-27 14:00 UTC
    - Proposed agreements in [R2-2003844](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003844.zip) indicated for email agreement and not challenged until Tuesday 2020-04-28 14:00 UTC will be declared as agreed by the session chair.

Status: Started

**LTE/NR Mobility**

* [AT109bis-e][205][MOB] Flagging and discussion of DAPS UP open issues for PDCP/RLC/MAC (Huawei)

Scope:

* + - Companies flagging critical DAPS UP issues requiring Web conference discussion
    - Discuss the remaining UP open issues identified in email discussion report of Post109#11 in [R2-2003371](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003371.zip).

Intended outcome:

* + - Discussion summary document in [R2-2003845](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003845.zip), including resolutions to open issues and identification of non-critical issues that should no longer be pursued in Rel-16

Deadlines for flagging issues for Web conference discussion:

* + - Flagging of issues for the Web conference: Tuesday 2020-04-21 10:00 UTC
    - Rapporteur summary: Tuesday 2020-04-21 11:30 UTC

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Friday 2020-04-24 10:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003845](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003845.zip)): Monday 2020-04-27 10:00 UTC
    - Proposed agreements in [R2-2003845](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003845.zip) indicated for email agreement and not challenged until Tuesday 2020-04-28 12:00 UTC will be declared as agreed by the session chair.

Status: Started

* [AT109bis-e][206][MOB] Flagging and discussion of DAPS CP open issues for RRC (Intel)

Scope:

* + - Companies flagging critical DAPS CP issues requiring Web conference discussion
    - Discuss the remaining CP/RRC open issues identified in email discussion report of Post109#11 in [R2-2003371](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003371.zip).

Intended outcome:

* + - Discussion summary document in [R2-2003846](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003846.zip), including resolutions to open issues and identification of non-critical issues that should no longer be pursued in Rel-16

Deadlines for flagging issues for Web conference discussion:

* + - Flagging of issues for the Web conference: Tuesday 2020-04-21 10:00 UTC
    - Rapporteur summary: Tuesday 2020-04-21 11:30 UTC

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Friday 2020-04-24 12:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003846](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003846.zip)): Monday 2020-04-27 14:00 UTC
    - Proposed agreements in [R2-200384](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003842.zip)6 indicated for email agreement and not challenged until Tuesday 2020-04-28 14:00 UTC will be declared as agreed by the session chair.

Status: Started

* [AT109bis-e][207][MOB] Resolution to open issues for CHO (Nokia)

Scope:

* + - Discuss the remaining open issues identified in email discussion report of Post109#12 in [R2-2003105](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003105.zip).

Intended outcome:

* + - Discussion summary document in [R2-2003847](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003847.zip)
    - Agreeable proposals for closing critical open issues (if possible).
    - Non-critical issues that should no longer be pursued in Rel-16

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Friday 2020-04-24 18:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-200384](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003842.zip)7): Monday 2020-04-27 18:00 UTC
    - Proposed agreements in [R2-2003847](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003847.zip) indicated for email agreement and not challenged until Tuesday 2020-04-28 18:00 UTC will be declared as agreed by the session chair.

Status: Started

**NR Mobility**

* [AT109bis-e][208][NR MOB] Finalization of T312 for fast handover failure recovery (Samsung)

Scope:

* + - Discuss the topics raised by contributions in AI 6.9.3.2 to see which issues need to be resolved in Rel-16.

Intended outcome:

* + - Discussion summary document in [R2-2003848](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003848.zip)
    - Agreeable proposals for closing critical open issues (if possible).
    - Non-critical issues that should no longer be pursued in Rel-16

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Thursday 2020-04-23 12:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003848](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003848.zip)): Friday 2020-04-24 12:00 UTC
    - Proposed agreements in [R2-2003848](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003848.zip) indicated for email agreement and not challenged until Tuesday 2020-04-28 12:00 UTC will be declared as agreed by the session chair.

Status: Started

* [AT109bis-e][209][NR MOB] Resolution to remaining open issues of CPC (CATT)

Scope:

* + - Identify if any critical issues are remaining for the CPC based on this meeting’s contributions and attempt to identify company views to those

Intended outcome:

* + - Discussion summary document in [R2-2003849](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003849.zip), including agreeable proposals for closing critical open issues (if possible) and list of non-critical issues that should no longer be pursued in Rel-16
    - The proposed agreements in [R2-2003849](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003849.zip) will be handled in the Monday 2020-04-27 Web conference session

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Thursday 2020-04-23 12:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003849](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003849.zip)): Friday 2020-04-24 12:00 UTC
    - Discussion outcome to be treated in Monday 2020-04-27 session

Status: Started

**CR finalization (some scope changes may still occur during 1st meeting week)**

* [AT109bis-e][211][NR MOB] RRC CR (Intel)

Scope:

* + - NR mobility RRC CR capturing NR DAPS, NR CHO and CPC changes agreed in this meeting

Intended outcome:

* + - In-principle agreed 38.331 CR for NR mobility
    - If needed, in-principle agreed 36.331 CR for NR mobility (mainly due to T312 and CPC)
    - Final CRs can be provided in [R2-2003850](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003850.zip) (NR RRC) and [R2-2003851](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003851.zip) (LTE RRC)

Deadlines for providing comments and for rapporteur inputs:

* + - Deadline for companies' feedback: Wednesday 2020-04-29 10:00 UTC
    - Deadline for rapporteur's version for agreement: Thursday 2020-04-30 10:00 UTC

Status: Not yet started

* [AT109bis-e][212][LTE MOB] RRC CR (Ericsson)

Scope:

* + - LTE mobility RRC CR capturing DAPS and CHO changes agreed in this meeting

Intended outcome:

* + - In-principle agreed 36.331 CR for LTE mobility
    - Final CR can be provided in [R2-2003852](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003852.zip) (LTE RRC)

Deadlines for providing comments and for rapporteur inputs:

* + - Deadline for companies' feedback: Wednesday 2020-04-29 10:00 UTC
    - Deadline for rapporteur's version for agreement: Thursday 2020-04-30 10:00 UTC

Status: Not yet started

* [AT109bis-e][213][MOB] PDCP CRs for LTE and NR (Huawei)

Scope:

* + - PDCP CRs for LTE and NR DAPS corrections agreed in this meeting

Intended outcome:

* + - In-principle agreed 36.323 and 38.323 CR for LTE and NR mobility based on changes agreed in this meeting
    - Final CRs can be provided in [R2-2003853](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003853.zip) (NR PDCP) and [R2-2003854](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003854.zip) (LTE PDCP)

Deadlines for providing comments and for rapporteur inputs:

* + - Deadline for companies' feedback: Wednesday 2020-04-29 10:00 UTC
    - Deadline for rapporteur's version for agreement: Thursday 2020-04-30 10:00 UTC

Status: Not yet started

* [AT109bis-e][214][MOB] MAC CRs for LTE and NR (vivo)

Scope:

* + - MAC CRs for LTE and NR DAPS corrections agreed in this meeting

Intended outcome:

* + - In-principle agreed 36.321 and 38.323 C1 for LTE and NR mobility based on changes agreed in this meeting
    - Final CRs can be provided in [R2-2003855](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003855.zip) (NR MAC) and [R2-2003856](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003856.zip) (LTE MAC)

Deadlines for providing comments and for rapporteur inputs:

* + - Deadline for companies' feedback: Wednesday 2020-04-29 10:00 UTC
    - Deadline for rapporteur's version for agreement: Thursday 2020-04-30 10:00 UTC

Status: Not yet started

**Tentative Post-meeting email discussions (to be clarified during the meeting)**

* [Post109bis-e][NR MOB] Stage-2 CR (Intel)

Intended outcome: 38.300 CR for NR mobility WI (including T312, CPC) based on updates from RAN2#109bis-e

Deadline: Long (until next meeting)

* [Post109bis-e][LTE MOB] Stage-2 CR (China Telecom)

Intended outcome: 36.300 CR for LTE mobility WI based on updates from RAN2#109bis-e

Deadline: Long (until next meeting)

* [Post109bis-e][NR MOB] Stage-2 CR for CPC (CATT)

Intended outcome: 37.340 CR for NR mobility on CPC based on updates from RAN2#109bis-e

Deadline: Long (until next meeting)

* [Post109bis-e][NR MOB] UE capabilities for NR mobility (Intel)

Intended outcome: Discuss remaining issues with UE capabilities for NR mobility based on RAN1 input and updates from RAN2#109bis-e (if any)

Deadline: Long (until next meeting)

* [Post109bis-e][LTE MOB] UE capabilities for NR mobility (China Telecom)

Intended outcome: Discuss remaining issues with UE capabilities for LTE mobility based on RAN1 input and updates from RAN2#109bis-e (if any)

Deadline: Long (until next meeting)

# 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 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.

## 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.

By Email

[R2-2003841](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003841.zip) Summary of LTE contributions in AI 4.5 Nokia (RAN2 VC) discussion Late

* [AT109bis-e][201][LTE15] Simple LTE legacy CRs (RAN2 VC)

Scope:

* + - Attempt to agree to CRs in [R2-2003451](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003451.zip), [R2-2003452](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003452.zip), [R2-2003453](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003453.zip), [R2-2003232](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003232.zip), [R2-2003233](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003233.zip), [R2-2002619](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002619.zip) and [R2-2002620](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002620.zip).

Intended outcome:

* + - Discussion summary in [R2-2003841](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003841.zip) (by email rapporteur), including list of CRs are agreed or moved to discussion **202** (for further discussion)
    - Agreeable CRs (by each CR proponent)

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Wednesday 2020-04-22 16:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003841](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003841.zip)): Thursday 2020-04-23 10:00 UTC
    - Proposed agreements in [R2-2003841](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003841.zip) indicated for email agreement and not challenged until Thursday 2020-04-23 22:00 UTC will be declared as agreed by the session chair.

Status: Not yet started (to be done Monday Apr. 20th)

* [AT109bis-e][202][LTE15] Other LTE legacy CRs (RAN2 VC)

Scope:

* + - Discuss the CRs in [R2-2003147](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003147.zip), [R2-2003148](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003148.zip), [R2-2003149](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003149.zip), [R2-2003150](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003150.zip), [R2-2003151](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003151.zip) and [R2-2003548](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003548.zip), [R2-2003549](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003549.zip), [R2-2003550](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003550.zip), [R2-2003551](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003551.zip), [R2-2003552](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003552.zip), [R2-2003553](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003553.zip), [R2-2003554](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003554.zip), to determine what to capture in specifications and from which release onwards.
    - Discuss the CRs [R2-2003152](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003152.zip), [R2-2003153](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003153.zip), [R2-2003154](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003154.zip) to determine if the interpretation is correct and how a correction should be captured (if needed).
    - Handle any CRs from discussion **201** as necessary

Intended outcome:

* + - Discussion summary in [R2-2003841](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003841.zip), detailing which CRs (if any) can be agreed and recording the summary of offline discussions comments
    - For CRs that can be agreed, final CRs (by CR proponents)

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Thursday 2020-04-23 12:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003841](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003841.zip)): Friday 2020-04-24 08:00 UTC
    - Proposed agreements in [R2-2003841](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003841.zip) indicated for email agreement and not challenged until Tuesday 2020-04-28 12:00 UTC will be declared as agreed by the session chair.

Status: Not yet started (to be done Monday Apr. 20th)

Pre-Rel-15 topics:

Rel-10/12 non-contiguous intra-band CA capabilities:

[R2-2003147](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003147.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003148.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003149.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003150.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003151.zip) 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

[R2-2003548](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003548.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003549.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003550.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003551.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003552.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003553.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003554.zip) 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

* Handled in email discussion [202]

Rel-13 CA codebook support:

[R2-2003152](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003152.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003153.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003154.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003155.zip) 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

* Handled in email discussion [202]

Rel-14 Autonomous measurement gap release:

[R2-2003451](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003451.zip) Correction on autonomous measurment gap release Huawei, HiSilicon CR Rel-14 36.331 14.14.0 4267 - F LTE\_meas\_gap\_enh

[R2-2003452](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003452.zip) Correction on autonomous measurment gap release Huawei, HiSilicon CR Rel-15 36.331 15.9.0 4268 - A LTE\_meas\_gap\_enh

[R2-2003453](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003453.zip) Correction on autonomous measurment gap release Huawei, HiSilicon CR Rel-16 36.331 16.0.0 4269 - A LTE\_meas\_gap\_enh

* Handled in email discussion [201]

Minor changes by RRC rapporteur:

[R2-2003232](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003232.zip) Minor changes collected by Rapporteur Samsung Telecommunications draftCR Rel-14 36.331 14.14.0 F MBMS\_LTE\_enh2-Core

[R2-2003233](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003233.zip) Minor changes collected by Rapporteur Samsung Telecommunications draftCR Rel-15 36.331 15.9.0 F MBMS\_LTE\_enh2-Core, TEI15

* Handled in email discussion [201]

Rel-15 topics:

[R2-2002619](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002619.zip) Correction on SRB duplication OPPO CR Rel-15 36.323 15.5.0 0280 - F LTE\_HRLLC

[R2-2002620](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002620.zip) Correction on SRB duplication OPPO CR Rel-16 36.323 16.0.0 0281 - A LTE\_HRLLC

* Handled in email discussion [201]

Segmentation of warning area coordinates in LTE and NR

[R2-2003569](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003569.zip) Discussion on Need code for CMAS Huawei, HiSilicon discussion Rel-15 TEI15

[R2-2003570](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003570.zip) Correction on Need code for CMAS Huawei, HiSilicon draftCR Rel-15 36.331 15.9.0 F TEI15

[R2-2003571](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003571.zip) Correction on Need code for CMAS Huawei, HiSilicon draftCR Rel-16 36.331 16.0.0 A TEI15

[R2-2003572](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003572.zip) Correction on Need code for CMAS Huawei, HiSilicon draftCR Rel-15 38.331 15.9.0 F TEI15

[R2-2003573](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003573.zip) Correction on Need code for CMAS Huawei, HiSilicon draftCR Rel-16 38.331 16.0.0 A TEI15

* All of these contributions are handled jointly with NR in AI 5.4.1.5

*Withdrawn*

[R2-2003390](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003390.zip) Minor changes collected by Rapporteur Samsung Telecommunications draftCR Rel-14 36.331 14.14.0 F MBMS\_LTE\_enh2-Core Late Withdrawn

[R2-2003391](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003391.zip) Minor changes collected by Rapporteur Samsung Telecommunications draftCR Rel-15 36.331 15.9.0 F MBMS\_LTE\_enh2-Core, TEI15 Late Withdrawn

# 6 Rel-16 NR Work Items

## 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

By Web Conf

*Rapporteur input: Stage-2 corrections:*

[R2-2002744](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002744.zip) Corrections to Mobility Enhancements Nokia, Intel Corporation (Rapporteurs) CR Rel-16 38.300 16.1.0 0211 - F NR\_Mob\_enh-Core

* LGE wonders if NOTE3 in 9.2.3.1 is correct. Nokia thinks this was done in last meeting under UE capability discussion.
* LGE wonders who releases the SCells: Network or UE? Nokia thinks this is general and doesn’t take a stance on this. This wasn’t discussed last time but the note is still correct.
* Intel thinks we agreed this is done by network. Ericsson agrees network releases the SCells. Futurewei also agrees. vivo also agrees but is not sure we need the note in Stage-2.
* Intel thinks this is currently the only place where this is captured. Stage-3 will only contain UE capabilities that state UE doesn’t support SCells during DAPS.
* Apple thinks we should make it clear in the note that network releases the Scells.
* Qualcomm thinks network should also not add SCells during DAPS.
* vivo thinks in 9.2.7, the “otherwise” part is not needed. Intel thinks the first “otherwise” is for non-CHO target and second is for normal RLF without CHO failure handling.
* OPPO thinks “in case of CHO” is unclear.

=> Change to “Only PCell is **kept** during DAPS handover and all SCells are released **by network**” for NOTE3 in 9.2.3.1

=> With this change, the CR is in principle agreed in R2-2003857

*Rapporteur input: UE capabilities*

[R2-2003368](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003368.zip) UE Capability for Rel-16 NR mobility enhancement Intel Corporation draftCR Rel-16 38.306 16.0.0 NR\_Mob\_enh-Core [R2-2001092](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2001092.zip)

[R2-2003369](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003369.zip) UE Capability for Rel-16 NR mobility enhancement Intel Corporation draftCR Rel-16 38.331 16.0.0 NR\_Mob\_enh-Core

=> Go for post-meeting email discussion to take also RAN1 input into account.

* [Post109bis-e][NR MOB] UE capabilities for NR mobility (Intel)

Intended outcome: Discuss remaining issues with UE capabilities for NR mobility based on RAN1 input and updates from RAN2#109bis-e (if any)

Deadline: Long (until next meeting)

CR finalization

* [AT109bis-e][211][NR MOB] RRC CR (Intel)

Scope:

* + - NR mobility RRC CR capturing NR DAPS, NR CHO and CPC changes agreed in this meeting

Intended outcome:

* + - In-principle agreed 38.331 CR for NR mobility
    - If needed, in-principle agreed 36.331 CR for NR mobility (mainly due to T312 and CPC)
    - Final CRs can be provided in [R2-2003850](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003850.zip) (NR RRC) and [R2-2003851](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003851.zip) (LTE RRC)

Deadlines for providing comments and for rapporteur inputs:

* + - Deadline for companies' feedback: Wednesday 2020-04-29 10:00 UTC
    - Deadline for rapporteur's version for agreement: Thursday 2020-04-30 10:00 UTC

Status: Not yet started

**Thursday web converence:**

This discussion is planned to be triggered now.

* CPC parts affecting LTE RRC moved to LTE RRC CR discussion.

### 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).

### 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 [Post109bis-e#12][MOB] Resolving open issues for CHO (Nokia)

Tdoc Limitation per company: 1 tdoc.

Contributions on issues already resolved by the email discussion [Post109bis-e#12][MOB] are discouraged.

By Web Conf

[R2-2003105](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003105.zip) E-mail discussion report [Post109bis-e#12][MOB] Resolving open issues for CHO Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core

**Proposals from the email discussion outcome:**

*Proposal 1: More than one measurement object can’t be configured for a candidate cell when 2 triggering events (MeasId) are used for CHO execution condition (condExecutionCond). Field description of condExecutionCond shall be updated accordingly.*

* Rapporteur indicates only one company would like more than one measurement object. Capturing this in specification was not yet discussed.
* Ericsson clarifies that this relates to the possibility of configuring SCG in the CHO, as this could be useful for that case (i.e. one condition for MCG and one for SCG).

*Proposal 2: In Rel-16 SCG configuration in RRC Reconfiguration with conditional reconfiguration is not supported.*

* Rapporteur points out that disallowing this might be difficult to be captured. Also offline discussion [207] is discussing details of this proposal. QC agrees and thinks this would be useful when MCG and SCG are collocated. Nokia thinks we will spend a lot of time capturing this. MediaTek agrees.
* Ericsson is concerned about RAN3 impact if we support SCG. Should avoid that. Intel agrees. Futurewei agrees.
* Samsung would like to clarify that we limit to cases without RAN3 impact.

*Proposal 3: Change the procedure’s name from ‘’Conditional configuration’’ to ‘’Conditional reconfiguration’’ to make it aligned with the corresponding IE.*

* Intel thinks we use conditional configuration in some cases. So we are not consistent. Nokia thinks “reconfiguration” is more consistent with procedures.

*Proposal 4: Discuss and decide if RRC shall be updated with: a) ‘’UE shall stop evaluating CHO execution conditions’’ or b) ‘’UE is not required to evaluate CHO execution conditions’’ to possibly extend the procedure in 5.3.5.13.5. In case of no alignment between the involved companies, capture nothing in NR/LTE RRC specification.*

* LGE thinks we should capture a).
* MediaTek thinks b) is correct and we do not need to capture anything.
* Nokia is fine to cpature nothing but can accept to copy Stage-2 text on this.

*Proposal 5: Discuss and decide if the UE is allowed to evaluate the CHO execution conditions after MCG failure (the start of T316). If not, extend the RRC specification (section 5.3.10.3) with a subclause ‘6> stop conditional configuration evaluation’.*

* Intel assumes we could have a common agreement for CPC and CHO on this. It’s not agreed for CPC yet but majority view is currently not to allow it. CATT clarifies that for CPC, it’s been discussed that UE waits for network response after sending MCG failure.
* MediaTek thinks CHO failure recovery will not work if we agree to align with CPC. Nokia thinks that after MCG failure it may not be possible to even evaluate the conditions if they refer to PCell quality.
* Ercisson thinks this is not essential to allow and we just don’t add anything to specifications.
* Qualcomm thinks we should just capture that when T316 starts, UE stops CHO evaluation. Nokia agrees.
* Samsung objects (sustained objection) to proposal 5 and would like to allow only CHO recovery or MCG failure recovery. Would like to consider in implementation which one is more important, MCG failure recovery may not always be that.

Agreements

1 More than one measurement object can’t be configured for a candidate cell when 2 triggering events (MeasId) are used for CHO execution condition (condExecutionCond). Field description of condExecutionCond shall be updated accordingly.

2 We will not preclude SCG configuration in RRC Reconfiguration with conditional reconfiguration. Limit to cases without RAN3 impact.

3 Use ‘’Conditional reconfiguration’’ consistently within RRC.

4 Rely on existing Stage-2 text that UE stops evaluating execution condition and capture nothing additional in NR/LTE RRC specification about CHO execution conditions after the CHO condition is met and CHO execution is started.

* Discuss in [207] further on whether UE stops conditional configuration evaluation when T316 starts.

*MCG failure and CHO:*

[R2-2002748](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002748.zip) On measurement and evaluation during CHO execution Futurewei discussion Rel-16 NR\_Mob\_enh-Core

[R2-2002900](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002900.zip) T304 running issue when CHO Execution LG Electronics Inc. discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core [R2-2001535](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2001535.zip)

[R2-2002951](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002951.zip) Discussion of some remaining issues for CHO OPPO discussion Rel-16 NR\_Mob\_enh-Core

[R2-2002996](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002996.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003035.zip) CHO and MR-DC operation Ericsson discussion NR\_Mob\_enh-Core

[R2-2003106](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003106.zip) MCG recovery versus recovery via CHO - Rel-16 impact Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core

[R2-2003260](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003260.zip) Further details of CHO configuration and execution China Telecom discussion Rel-16

[R2-2003333](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003333.zip) Clarification on source reconfigiration during CHO Samsung CR Rel-16 38.300 16.1.0 0216 - F NR\_Mob\_enh-Core

[R2-2003422](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003422.zip) Further consideration on conventional HO overriding a CHO command ZTE Corporation, Sanechips discussion Rel-16 NR\_Mob\_enh-Core

[R2-2003577](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003577.zip) Discussion on leftovers for CHO Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

[R2-2003609](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003609.zip) UE configuration release in RRC reestbalishment SHARP discussion NR\_Mob\_enh-Core, LTE\_feMob-Core

* Handled in email discussion [207]

By Email

* [AT109bis-e][207][MOB] Resolution to open issues for CHO (Nokia)

Scope:

* + - Discuss the remaining open issues identified in email discussion report of Post109#12 in [R2-2003105](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003105.zip).

Intended outcome:

* + - Discussion summary document in [R2-2003847](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003847.zip)
    - Agreeable proposals for closing critical open issues (if possible).
    - Non-critical issues that should no longer be pursued in Rel-16

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Thursday 2020-04-23 12:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-200384](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003842.zip)7): Friday 2020-04-24 12:00 UTC
    - Proposed agreements in [R2-2003847](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003847.zip) indicated for email agreement and not challenged until Tuesday 2020-04-28 12:00 UTC will be declared as agreed by the session chair.

Status: Started

#### 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

*Corrections to T312:*

[R2-2003578](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003578.zip) Discussion on T312 support Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core

[R2-2002599](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002599.zip) Discussions on VarRLF-Report Setting Quectel discussion

*Coexistence of T312, CHO and MCG failure recovery::*

[R2-2002901](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002901.zip) Failure handling of both CHO and MR-DC LG Electronics Inc. discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

[R2-2003036](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003036.zip) Failure handling interaction Ericsson discussion NR\_Mob\_enh-Core

* Handled in email discussion [208]
* [AT109bis-e][208][NR MOB] Finalization of T312 for fast handover failure recovery (Samsung)

Scope:

* + - Discuss the topics raised by contributions in AI 6.9.3.2 to see which issues need to be resolved in Rel-16.

Intended outcome:

* + - Discussion summary document in [R2-2003848](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003848.zip)
    - Agreeable proposals for closing critical open issues (if possible).
    - Non-critical issues that should no longer be pursued in Rel-16

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Thursday 2020-04-23 12:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003848](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003848.zip)): Friday 2020-04-24 12:00 UTC
    - Proposed agreements in [R2-2003848](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003848.zip) indicated for email agreement and not challenged until Tuesday 2020-04-28 12:00 UTC will be declared as agreed by the session chair.

Status: Closed

[R2-2003848](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003848.zip) Offline discussion 208: Finalization of T312 for Fast handover failure recovery Samsung (Offline rapporteur) discussion NR\_Mob\_enh-Core

* Noted (no specification impacts identified)
* No known open issues remain for NR T312 in Rel-16

#### 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002902.zip) Consideration on CHO capability LG Electronics Inc. discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

[R2-2003037](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003037.zip) UE capabilities for CHO Ericsson discussion NR\_Mob\_enh-Core

[R2-2003579](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003579.zip) Discussion on UE capabilities for CHO and T312 Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

* To be confirmed during the meeting: Handled in post-meeting email discussion

*Withdrawn*

[R2-2003028](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003028.zip) UE capabilities for CHO and NR T312 Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core Late Withdrawn

### 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 [Post109bis-e#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 [Post109bis-e#13][MOB] are discouraged.

Tdoc Limitation per company: 1 tdoc

Outcome of email discussion [Post109bis-e#13][MOB] Resolving open issues for CPC (CATT):

[R2-2003440](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003440.zip) Report of [post109bis-e@13][NR MOB] Resolving open issues for CPC CATT discussion Rel-16 NR\_Mob\_enh-Core Late

**Proposals from the email discussion outcome:**

*Proposal 1: The UE does not inform the MN when CPC execution condition is fulfilled and the UE starts executing CPC, when CPC configuration is provided over SRB3.*

* vivo wonders if the SN informs MN about the CPC completion in case there are multiple candidates. CATT indicates this was not really discussed and may not be necessary since MN is not aware of the CPC candidates. SN can release the other candidates.
* Nokia thinks MN is informed with SRB1 so would like to have the same for SRB3. Futurewei agrees and thinks that if we support this for SRB1, we should support it for SRB3.
* CATT indicates that from the CR provided, the change is not really needed as RRCReconfigurationComplete is provided to target SN anyway.

*Proposal 2: A threshold parameter is not introduced to determine PCell quality for execution of CPC.*

*Proposal 3: Upon transmission of SCG failure information to the network, the UE stops evaluating the CPC execution criteria according to the current CPC configuration until a response is received from the network (Action 1).*

* Futurewei disagrees as CPC is not CHO. If there are multiple candidates, should access any SCG that’s available. Nokia thinks we didn’t allow this for CHO so it’s even less critical for CHO. PCell is still accessible. Intel agrees as multiple CPC candidates are meant for different areas.

*Proposal 4: Whether the UE continue measurements for candidate PSCells upon CPC failure is left to the UE implementation.*

* OPPO thinks that for CPC we don’t have failure handling so not sure what the intention is. CATT thinks we don’t normally specify UE behaviour after failure. UE also waits network to respond so no need to trigger measurement reports but no need to prohibit either. Intel thinks measurement reports are anyway not triggered.
* vivo wonders if network needs to configure new MO to measure candidate PSCells after SCG failure?
* Nokia wonders if we talk about CPC execution or CPC measurements: Execution should stop but measurements continue.

*Proposal 5: the content of FailureReportSCG for CPC procedure failure should include failureType, measResultFreqList and measuResultSCG-Failure. These parameters are set according to the exiting SCGFailureInformation procedure. (same as legacy)*

*Proposal 6: The inclusion of cell ID of the failed CPC execution in SCG failure information message is not an essential for CPC operation (benefit of cell ID inclusion can be considered in later release).*

* CATT indicates views were split on this. vivo thinks the serving cell ID is already included in the measurements as UE has changed to the target CPC cell. OPPO thinks source PSCell is the one reported by UE, not target PSCell (since access failed).
* CATT indicates PCI could be useful for SON/MDT but is not essential for CPC itself. CMCC thinks there could be benefits from having PCI.

*Proposal 7: Use ULInformationTransferMRDC instead of RRCReconfigurationComplete message to inform the network of CPC execution when no SRB3 is configured and the MN informs the SN, i.e. ULInformationTransferMRDC message to MN includes an embedded RRCReconfigurationComplete message to the SN. This applies to both NR MN and LTE MN. (change of previous agreement).*

Agreements

1 The UE does not inform the MN when CPC execution condition is fulfilled and the UE starts executing CPC, when CPC configuration is provided over SRB3.

2 A threshold parameter is not introduced to determine PCell quality for execution of CPC.

3 Upon transmission of SCG failure information to the network, the UE stops evaluating the CPC execution criteria according to the current CPC configuration until a response is received from the network.

4 Whether the UE continue measurements for candidate PSCells configured for execution condition upon CPC failure is left to the UE implementation.

5 The content of FailureReportSCG for CPC procedure failure should include failureType, measResultFreqList and measuResultSCG-Failure. These parameters are set according to the exiting SCGFailureInformation procedure. (same as legacy)

7 Use ULInformationTransferMRDC instead of RRCReconfigurationComplete message to inform the network of CPC execution when no SRB3 is configured and the MN informs the SN, i.e. ULInformationTransferMRDC message to MN includes an embedded RRCReconfigurationComplete message to the SN. This applies to both NR MN and LTE MN. (change of previous agreement).

[R2-2003441](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003441.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003799.zip)

[R2-2003799](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003799.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003442.zip) Draft CR for transmission of RRCReconfigurationComplete upon CPC execution CATT draftCR Rel-16 36.331 16.0.0 F NR\_Mob\_enh-Core

*Remaining issues for CPC:*

[R2-2002749](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002749.zip) Clarifications on issues of CPC-intra-SN Futurewei discussion Rel-16 NR\_Mob\_enh-Core

[R2-2002800](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002800.zip) CPC with SRB3 Configuration Apple discussion NR\_Mob\_enh-Core

[R2-2002903](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002903.zip) Left Issues for CPC in R16 LG Electronics Inc. discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core [R2-2001536](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2001536.zip)

[R2-2003038](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003038.zip) Remaining issues for conditional PSCell change Ericsson discussion NR\_Mob\_enh-Core

[R2-2003100](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003100.zip) Remaining issues for CPC Lenovo, Motorola Mobility discussion Rel-16

[R2-2003107](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003107.zip) On how to close the open issues for Conditional PSCell Change Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core

[R2-2003327](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003327.zip) Discussion on CPC configuration handling during SCG Release Samsung discussion NR\_Mob\_enh-Core

[R2-2003423](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003423.zip) Remaining issues for CPC ZTE Corporation, Sanechips discussion Rel-16 NR\_Mob\_enh-Core

[R2-2003580](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003580.zip) Discussion the transaction id issues for CPAC Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core

* Some contributions may be handled in email discussion [209]

By Email

* [AT109bis-e][209][NR MOB] Resolution to remaining open issues of CPC (CATT)

Scope:

* + - Identify if any critical issues are remaining for the CPC based on this meeting’s contributions and attempt to identify company views to those

Intended outcome:

* + - Discussion summary document in [R2-2003849](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003849.zip), including agreeable proposals for closing critical open issues (if possible) and list of non-critical issues that should no longer be pursued in Rel-16
    - The proposed agreements in [R2-2003849](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003849.zip) will be handled in the Monday 2020-04-27 Web conference session

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Thursday 2020-04-23 12:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003849](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003849.zip)): Friday 2020-04-24 12:00 UTC

Status: Started

[R2-2003849](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003849.zip) Report of [AT109bis-e][209][NR MOB] Resolution to remaining open issues of CPC CATT (offline discussion rapporteur) discussion NR\_Mob\_enh-Core

*Proposal 1: The UE autonomously releases the stored CPC configuration upon the SCG release. This is applicable for intra-SN CPC where the MN is not aware of the CPC configuration by the SN.*

* Ericsson thinks the second sentence is not needed. Nokia thinks there may be difference in case SRB3 is used. SN could release them explicitly in that case.

*Proposal 2: measID and reportConfig associated with CPC config, and measObject(s) only associated to CPC shall be autonomously removed by UE when SCG is released. (wording may be improved in the text proposal in [R2-2003327]).*

*Proposal 3: Whether there is any issue for the case where multiple candidate PSCells are configured in one gNB-DU should be first discussed in RAN3.*

* CATT explains that in case one DU has multiple cells, it’s not clear which cell is used as PSCell in DU-to-CU information. This is also not in SRB1, so CU doesn’t know which cell in DU is used by the UE. UE might need to inform this to CU. RAN3 could also potentially solve this via F1AP information.

*Proposal 4: Support of target CPC configuration in legacy HO command or target CPC configuration in target CPC command should not be considered in Rel-16.*

* Samsung thinks also CPC conditions can’t be configured.
* QC wonders what is meant by this. CATT clarifies it’s the whole CPC configuration inside HO or another CPC.
* QC thinks CPC inside CPC shouldn’t be supported but CPC inside HO could be supported since nothing is broken. Ericsson thinks we changed this for CHO so that we can include SCG inside CHO.
* Intel thinks UE discards CPC/CHO configurations when HO is executed since we release all conditional configurations.

*Proposal 5: Reconfirm the previous agreement: Support of CHO and CPC-intra-SN configuration simultaneously is not considered in Rel-16.*

* Ericsson thinks this requires network signalling to add so would like to revert the agreement to simplify. CATT thinks we already sent an LS to RAN3 and this can be done via OAM.

Agreements

1 If CPC configuration is not released by network, the UE autonomously releases the stored CPC configuration upon the SCG release.

2 measID and reportConfig associated with CPC config, and measObject(s) only associated to CPC shall be autonomously removed by UE when SCG is released.

4 Support of CPC configuration (CPC condition + CPC reconfiguration) in legacy HO command or CPC configuration in CPC configuration should not be considered in Rel-16.

* Companies can discuss in RAN3 if there is any issue for the case where multiple candidate PSCells are configured in one gNB-DU. No RAN2 actions identified so far.

#### 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002904.zip) Consideration on CPC capability LG Electronics Inc. discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

[R2-2003039](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003039.zip) UE capabilities for conditional PSCell change Ericsson discussion NR\_Mob\_enh-Core

[R2-2003581](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003581.zip) Discussion on UE capabilities for CPC Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core

* To be confirmed during the meeting: Handled in post-meeting email discussion

*Withdrawn*

[R2-2003029](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003029.zip) UE capabilities for CPC Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core Late

### 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003326.zip) [S350] Discussion on radio bearer handling in DAPS Samsung discussion NR\_Mob\_enh-Core

[R2-2003424](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003424.zip) [Z255] Correction for Pcell change in case of CPC ZTE Corporation, Sanechips discussion Rel-16 NR\_Mob\_enh-Core

[R2-2003664](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003664.zip) [H223] Correction on TAG configuration applied to target cell Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core

* Handled in email discussion [210]

By Email

* [AT109bis-e][210][MOB ASN1] ASN.1 discussion for LTE and NR mobility (Intel/Ericsson)

Scope:

* + - Handling per-WI issues raised in ASN.1 review, including handling contributions submitted to the meeting on ASN.1 issues.
    - Flagging issues for discussion during Web conference (for either the 1st or 2nd week Web conferences)

Intended outcome:

* + - Discussion summary document in [R2-2003844](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003844.zip), including proposals for ASN.1 issue resolution (including ASN.1 changes) and summary of discussions.
    - CR issues to be handled via CR email discussions

Deadline for providing comments and for rapporteur inputs:

* + - Flagging review issues for the ASN.1 discussion: Wednesday Apr. 22nd, 08:00 UTC
    - Initial deadline (for companies' feedback): Thursday 2020-04-23 12:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003844](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003844.zip)): Friday 2020-04-24 12:00 UTC
    - Proposed agreements in [R2-2003844](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003844.zip) indicated for email agreement and not challenged until Monday 2020-04-27 12:00 UTC will be declared as agreed by the session chair.

Status: Not yet started (to be done Monday Apr. 20th)

**Thursday web conference:**

- LGE indicates the schedule is overdue to we have to reschedule it. Intel indicates it will be triggered after the session. Only class 3 issues will be handled.

- Chair indicates that deadlines will be moved forward. Can provide feedback at least until 1 hour before Mon session start.

# 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

By Email

* [AT109bis-e][204][LTE ASN1] LTE general ASN.1 discussion (Samsung)

Scope:

* + - General ASN.1 issue discussion covering AI 7.0.1 according to ASN.1 review issue list.
    - Flagging issues for discussion during the LTE ASN.1 web conference session(s) via email before the session(s)

Intended outcome:

* + - Discussion summary document in [R2-2003843](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003843.zip), detailing the proposals for ASN.1 issue resolution (including ASN.1 changes).
    - Combined CR with the agreed changes on general ASN.1 for LTE

Deadline for providing comments and for rapporteur inputs:

* + - Flagging review issues for discussion in the 1st ASN.1 session: Tuesday Apr. 21st, 8:00 UTC
    - Flagging review issues for discussion in the 2nd ASN.1 session: Mondday Apr. 27th, 8:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003843](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003843.zip)): Friday 2020-04-24 08:00 UTC
    - Proposed agreements in [R2-2003843](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003843.zip) indicated for email agreement and not challenged until Tuesday 2020-04-28 12:00 UTC will be declared as agreed by the session chair.

Status: Started

Scope clarifications

This e-mail concerns the general issues i.e. of class 2 type, and is handled in two parts:

* + **Part 1 (deadline Thu 23 Apr 12.00 UCT)**: main intention is to determine the issues requiring further discussion. Companies are requested to use the **flagging** procedure (see below) if they have a concern regarding the way forward for issues marked as PropAgree, PropReject, PropNoAct, PropTDoc
    - For PropTDoc, assigned company must distribute TDoc by deadline of part 2
  + **Part 2 (deadline Thu 27 Apr 8.00 UCT)**: Discussion of the way forward for issues with status DiscMail (possibly after flagging)

Flagging procedure:

If a company has concerns with the proposed way forward, flag the concerned RIL by sending a mail to

* the Chairman
* the Rapporteurs (Håkan/ Himke)
* cc 3GPP RAN2 mail list

**Mail format:**

Subject field:     **[LTE Rel-16] 36331 RIL FLAGGING: <RIL-id>**

Mail body:           Please provide the reason for flagging

**Discussion**

* Samsung clarifies that this discussion is used for flagging class 2 issues, need to be clear where to flag class 3 issues (e.g. DCCA, mobility, V2X) – could handle those within this discussion except for NB-IoT/MTC discussions which have another email thread.
* Qualcomm indicates eMTC discussion only handles class 3 and 4 at the moment. Huawei indicates it’s the same for NB-IoT.
* Qualcomm wonders how we capture the conclusions. If we capture some in email, we don’t need to raise them again in sessions. Samsung agrees and indicates we need to agree where we document the results.
* Intel wonders how we capture the mobility RRC issues – in WI session or in ASN.1 session. Ericsson thinks class 3 issues should be handled in WI sessions. If handled via email, we should minute the outcome of the email so it can be taken into account in the RRC.
* Huawei thinks V2X changes are coming from NR V2X, not LTE so class 3 issues for V2X should be discussed in V2X session.
* Samsung indicates we will still discussed updated review plan in main session.
* This email discussion will also handle flagging of class 3 issues for all LTE Rel-16 WIs except eMTC and NB-IoT.

=> Any decisions done will be captured in an agreed Tdoc so they can be implemented in CRs with documentation.

=> Mobility issues are mainly handled in mobility session or via email.

=> WI-specific issues (class 3) are handled in the respective WI sessions

By Web Conf

Including outcome of the email discussion [Post109bis-e#52][ASN.1] RRC ASN.1 review LTE specific (Samsung)

[R2-2003231](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003231.zip) General ASN.1 issues for 36.331 Rel-16 (S001- S006) Samsung Telecommunications discussion Rel-16 Late

Discusssion

P2

* Samsung indicates the main point is whether to use a different extension than before. Ericsson thinks we should retain existing mechanism.
* Chair proposes that companies think this through and come up with concrete proposal if they like the new mechanism.
* Qualcomm thinks we can reduce the number of spares.

P3

* Intel wonders if the Rel-15 cause value can be used at all in the Rel-16 message. There’s no problem with the current version either. Is worried this would change too much. Samsung thinks this is the normal way so the proposal is just aligning to that. Intel thinks we need to understand BC issue.
* Ericsson wonders if there is BC issues? Samsung clarifies there isn’t any. Qualcomm thinks this is cleaner but hasn’t analyzed thoroughly.

P4/P5

* Huawei indicates this was discussed in V2X session but decided otherwise to have a separate procedure. Since sidelink is not a CG, separate message was created. Ericsson thinks we could put this into an IE similar to the P5. Ericsson is not OK to use MRDC – message.
* Samsung thinks this is just transparent container. Huawei clarifies that eNB can read it in this case as it’s created by eNB even if the definition is in NR RRC.
* Ericsson thinks we could just put the OCTET STRINGs into existing messages without creating new messages. Samsung thinks that could be OK.
* Huawei thinks it’s not possible to know what we do in the future.

**Agreements**

1 RAN2 confirms that the last available spare in ResumeCause is taken for MT EDT.

2 We stick to existing extension mechanism and with 16 spare values.

3 Create a separate CR (for next meeting) to use a regular critical extension of the FailureInformation message i.e. re-use the existing name and ASN.1 section

=>Discuss concrete proposals for P4/P5 in ASN.1 email discussion. (Samsung)

=> Discuss P6 over email (Samsung)

[R2-2003234](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003234.zip) ASN.1 Review file (LTE) Samsung Telecommunications draftCR Rel-16 36.331 16.0.0 F TEI16 Late

=> To be used for further flagging and review comments

[R2-2003235](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003235.zip) LTE Rel-16 ASN.1 Review, Class 0 and Class 1 issues Samsung Telecommunications report Rel-16 Late

=> To be implemented according to general process

[R2-2003843](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003843.zip) [AT109e][066][R16] R16 LTE RRC coordination (Samsung) Samsung Telecommunications discussion Rel-16 36

* Noted (see issue-by-issue resolution below)

DiscMeet

*S044: The need of measObjectID range extension*

* Postpone to next meeting. Companies can bring contributions to discuss this.

*S046: Threshold itself can be encoded by EUTRA as the event is encoded by EUTRA.*

* Discussed together with B002 in email discussion [204] (see below)

Flagged RILs (class 2 issues) (1st and 2nd week online)

**Huawei:** *H136, H140 (No need for the -r16 suffix in the CHOICE entries):*

*we agree with the rapporteur PropReject but we want to highlight this means that we add back ‘-r16’  suffix everywhere it has been omitted*

* Huawei is fine not to remove tags but would like it to be consistent.
* Qualcomm thinks we have differences between fields and values: Fields have suffixes, values don’t initially but will have if introduced later on.
* Keep existing guidelines (as per Rel-15). Change conclusion to ConcAgree.
* Check if there are consistency issues with existing guidelines. Come back if discrepancies are found.

*E.g. For the issue H136: Use*

[[ gwus-Config-r16 CHOICE {

useWUS NULL,

explicit WUS-ConfigPerCarrier-NB-r15

} OPTIONAL -- Cond GWUS

]]

**Huawei:** *H148 (nrsrqResult should be removed as there is no measurements required defined for inter-frequency cell in TS 36.133):*

*we do not agree with rapporteur PropReject we think this should be discussed in NB-IOT specific session*

* Class 3 issue, Discuss in NB-IoT session.

**Huawei:** *H115 (Most parameters have no field description. Need to be added)*

*we do not agree with rapporteur PropTdoc. we propose to change to PropNoAct*

*This should be captured by the eMTC RRC CR rapporteur based on the RAN1 spreadsheet in email discussion [AT109bis-e][408][eMTC]  36.331 CR*

*-* Ericsson wonders if we capture common descriptions according to NB-IoT. QC clarifies there are many class 0/1 comments that are not yet captured.

* Capture field descriptions according to RAN1 guidance and RAN2 agreements. Change the conclusion to ConcAgree.
* Handle this in eMTC session, capture in RRC CR for MTC.

**Qualcomm:** *Z256 (Considering triggerCondition and condReconfigurationToApply is mandatory present when a condReconfigurationId is being added, the need code of the two IEs should be conditional and need ON.): Editorial suggestion compared to suggested change: both OPTIONAL need to be deleted as well from the fields, and in conditional presence, add* ***optional*** *before need ON.*

* Conclusion in [204]: Proposed way forward remains unchanged, but add optional in condition i.e. Otherwise, it is optional need ON.

**Qualcomm:** *B003 (It looks quite odd why a single spare has been added for mcch-RepetitionPeriod-r16 (spare7), mcch-ModificationPeriod-r16 (spare5), subcarrierSpacingMBMS-r16 (spare4) although the respective value range (power of 2) allow more spares. So, either more spares should be added to fill the entire value range or the single spares should be removed. However, due the fact that the IE MBSFN-AreaInfo-r16 also contains extension marker, the single spares can be removed from the respective value ranges and further extensions can be added using NCE.):*

*Unclear what “as suggested” means. Does that include suggested in comment v17 as the status was given in v18?*

* Conclusion in [204]: proposed way forward remains unchanged. Clarification added that all spares will be listed explicitly

**Qualcomm:** *N010 (Missing optionality and 1-bit field, which means it’s never encoded. Better use BOOLEAN.): I am still not convinced by the argument about not having Need OR on higher level due to extension marker overhead, because there are just too many existing fields already with need OR, so the likelihood of needing to include only this r16 new field and none of the other in the extension groups is very low. My understanding is if any of the following highlighted Need OR parameters is to be included, then the extension overhead is already included. May be I am missing something and if so could you kindly elaborate?*

|  |
| --- |
| *RadioResourceConfigCommonSCell-r10 ::=  SEQUENCE {*  *-- DL configuration as well as configuration applicable for DL and UL*  *<<skip>>*  *}                                                                     OPTIONAL,   -- Need OR*  *...,*  *[[  ul-CarrierFreq-v1090               ARFCN-ValueEUTRA-v9e0           OPTIONAL    -- Need OP*  *]],*  *[[  rach-ConfigCommonSCell-r11          RACH-ConfigCommonSCell-r11     OPTIONAL,   -- Cond ULSCell*  *prach-ConfigSCell-r11              PRACH-Config                    OPTIONAL,   -- Cond UL*  *tdd-Config-v1130                   TDD-Config-v1130                OPTIONAL,   -- Cond TDD2*  *uplinkPowerControlCommonSCell-v1130*  *UplinkPowerControlCommonSCell-v1130         OPTIONAL    -- Cond UL*  *]],*  *[[  pusch-ConfigCommon-v1270        PUSCH-ConfigCommon-v1270            OPTIONAL    -- Need OR*  *]],*  *[[  pucch-ConfigCommon-r13             PUCCH-ConfigCommon      OPTIONAL,   -- Cond UL*  *uplinkPowerControlCommonSCell-v1310*  *UplinkPowerControlCommonSCell-v1310    OPTIONAL    -- Cond UL*  *]],*  *[[  highSpeedConfigSCell-r14        HighSpeedConfigSCell-r14            OPTIONAL,   -- Need OR*  *prach-Config-v1430             PRACH-Config-v1430                  OPTIONAL,   -- Cond UL*  *ul-Configuration-r14               SEQUENCE {*  *ul-FreqInfo-r14                    SEQUENCE {*  *ul-CarrierFreq-r14                 ARFCN-ValueEUTRA-r9         OPTIONAL,   -- Need OP*  *ul-Bandwidth-r14                   ENUMERATED {n6, n15,*  *n25, n50, n75, n100}   OPTIONAL,   -- Need OP*  *additionalSpectrumEmissionSCell-r14     AdditionalSpectrumEmission*  *},*  *p-Max-r14                          P-Max                          OPTIONAL,   -- Need OP*  *soundingRS-UL-ConfigCommon-r14      SoundingRS-UL-ConfigCommon,*  *ul-CyclicPrefixLength-r14           UL-CyclicPrefixLength,*  *prach-ConfigSCell-r14                  PRACH-ConfigSCell-r10     OPTIONAL,   -- Cond TDD-OR-NoR11*  *uplinkPowerControlCommonPUSCH-LessCell-v1430*  *UplinkPowerControlCommonPUSCH-LessCell-v1430    OPTIONAL    -- Need OR*  *}                                                                 OPTIONAL,   -- Cond ULSRS*  *harq-ReferenceConfig-r14                   ENUMERATED {sa2,sa4,sa5}   OPTIONAL,       -- Need OR*  *soundingRS-FlexibleTiming-r14           ENUMERATED {true}           OPTIONAL        -- Need OR*  *]],*  *[[  mbsfn-SubframeConfigList-v1430      MBSFN-SubframeConfigList-v1430        OPTIONAL -- Need ON*  *]],*  *[[  uplinkPowerControlCommonSCell-v1530    UplinkPowerControlCommon-v1530      OPTIONAL -- Need ON*  *]],*  *[[*  *highSpeedConfigSCell-v16xy          HighSpeedConfigSCell-v16xy       OPTIONAL -- Need OR*  *]]*  *}* |

*So, my suggestion in v17 was as follows:*

*[[*

*~~highSpeedConfigSCell-v16xy          HighSpeedConfigSCell-v16xy~~     highSpeedEnhMeasFlagSCell-r16       ENUMERATED {true}   OPTIONAL -- Need OR*

*]]*

*~~HighSpeedConfigSCell-v16xy ::=  SEQUENCE {~~*

*~~highSpeedEnhMeasFlagSCell-r16       ENUMERATED {true}~~*

*~~}~~*

*However, if the conclusion is to add optionality for the lower level field just so that it is encoded, then* ***it should be Enumerated {true} Need OR, instead of Boolean mandatory*** *because otherwise the field description needs to be updated to say when set to TRUE (and there is no meaning of FALSE).*

**Proposal in [204]**

**Proposal 5 N010: Change field highSpeedConfigSCell-v16xy into a Boolean, optional need ON and update field description accordingly**

* Qualcomm thinks the field name should be highSpeedEnhMeasFlagSCell-r16.
* Conclusion in [204]: Change field highSpeedConfigSCell-v16xy into a Boolean, optional need ON, use name highSpeedEnhMeasFlagSCell-r16 and update field description accordingly. Bottom level field is deleted.

**Qualcomm: *H157 (*** *Should describe the conditional presence using conditional presence****):*** *Suggest to change to class 3. Reason below.*

***lte-M***

*Indicates the UE is category M. This field is included only when the UE is connected to 5GC.*

*My understanding of the proposed status means the following change (red text):*

|  |
| --- |
| *5.3.3.4          Reception of the RRCConnectionSetup by the UE*  *NOTE 1:  Prior to this, lower layer signalling is used to allocate a C-RNTI. For further details see TS 36.321 [6];*  *The UE shall:*  *<<skip>>*  *1>  set the content of RRCConnectionSetup**Complete message as follows:*  *<<skip>>*  *2> if the UE is connected to EPC:*  *3>  except for NB-IoT:*  *<<skip>>*  *3>  for NB-IoT:*   * *4>  if the UE has radio link failure information available in VarRLF-Report-NB and if the RPLMN is included in plmn-IdentityList stored in VarRLF-Report:*   *5> include rlf-InfoAvailable;*   * *4>  if the UE has ANR measurements results available in VarANR-MeasReport-NB and if the RPLMN is included in plmn-IdentityList stored in VarANR-MeasReport-NB:*   *5> include anr-InfoAvailable;*  *3>  include dcn-ID if a DCN-ID value (see TS 23.401 [41]) is received from upper layers;*  *2> <<insert somewhere here “else” (i.e., UE is connected to 5GC) and UE is a cat M UE then include lte-M indication>>*  *2> except for NB-IoT:*  *3>  if the UE supports storage of mobility history information and the UE has mobility history information available in VarMobilityHistoryReport:*   * *4>  include the mobilityHistoryAvail;*   *3>  if the SIB2 contains idleModeMeasurements, and the UE has idle/inactive measurement information concerning cells other than the PCell available in VarMeasIdleReport:*   * *4>  include the idleMeasAvailable;*   *3>  if upper layers indicate that access to RLOS is initiated (see TS 23.401 [41] subclause 4.3.8.3):*   * *4>  set rlos-Request to true;*   *2> if UE needs UL gaps during continuous uplink transmission:*  *3>  include ue-CE-NeedULGaps;*  *2> for NB-IoT:*  *3>  if the UE supports serving cell idle mode measurements reporting and servingCellMeasInfo is present in SystemInformationBlockType2-NB:*   * *4>  set the measResultServCell to include the measurements of the serving cell;*   *NOTE 2: The UE includes the latest results of the serving cell measurements as used for cell selection/ reselection evaluation, which are performed in accordance with the performance requirements as specified in TS 36.133 [16].*  *2> if connecting as an IAB-node:*  *3>  include iab-NodeIndication;*  *1>  submit the RRCConnectionSetupComplete message to lower layers for transmission;*  *1>  the procedure ends.* |

*As the exact wording for the statement above may need some polishing by eMTC folks, it is better handled in eMTC ASN.1 session.*

**Proposal in [204]**

**Proposal 6 H157: For lte-M, cover when UE shall include field within procedural specification (and remove statements from field descriptions. Change to class 3 issue (i.e. to reflect that detailed wording will be agreed in WI session)**

* Qualcomm clarifies this was already captured in eMTC CR.
* Conclusion in [204]: For lte-M, cover when UE shall include field within procedural specification (and remove statements from field descriptions.
* Change to class 3 (MTC) issue (i.e. to reflect that detailed wording will be agreed in WI session)

**Nokia: *N011 (****The outer SEQUENCE is unnecessary since only one field is contained.****):*** *Disagree with conclusion: If the outer field name encodes information, it is better captured in the file description of the contained field. It’s not good to create unnecessary SEQUENCEs for this purpose.*

**Proposal in [204]**

**Proposal 7 N011: Maintain structure bandwidthReducedAccessRelatedInfo-v16xy (as removal does not seem to simplify/ reduce specification). Condition may be updated to reflect extension is included only if original field is present.**

* Qualcomm wonders why we write the condition since that’s anyway normal behaviour for NCEs.
* Qualcomm changed their mind and now agrees with original Nokia comment. Should remove outer SEQUENCE and only retain inner field with condition.
* Conclusion in [204]: Remove the outer level structure bandwidthReducedAccessRelatedInfo-v16xy and move condition to the inner field. Field description can be updated to include NOTE 3.
* Capture this in MTC CR

**OPPO: *B002 (****The description is not fully clear. Instead of referring to the c1/c2-Threshold IEs the actual IE SL-CBR-r16 should be used.****):***

*we do not agree with rapporteur PropAgree.*

*As mentioned in details in [204], the inter-RAT sidelink measurement configuration and report framework needs to be considered as a whole.*

*As we claimed in [204]:*

*The two are related to one question we raised in the ASN.1 review of 38.331, under O310, which is commonly applicable to 38.331 and 36.331 since it relates to inter-RAT sidelink measurement configuration and report. If this method is adopted, the change on B002/S046 is not needed, i.e., the side-effect due to B-series type method can be avoided.*

***[Description]****: For inter-RAT CBR measurement configuration and reporting,, e.g., for the UE camped on Uu RAT-1, is configured to perform measurement on PC5 RAT-2 – we have two alternatives:*

* *Alt-1 (adopted by the running CR): Similar to Uu interface B-series measurement, i.e., UE camped on Uu RAT-1 to perform measurement on Uu RAT-2, via configuration / report via messages defined based on RAT-1, another series of measurement can be defined, in order for UE camped on Uu RAT-1 to perform measurement on PC5 RAT-2, via configuration / report via messages defined based on RAT-1.*
* *Alt-2: Similar to the introduction of ULInformationTransferMRDC, which is used for UE camped on Uu RAT-1 to perform measurement on Uu RAT-2, via configuration / report via messages defined based on RAT-2, included in ULInformationTransferMRDC as a container. Please note that by using this method, the impact to UE internal variable (e.g., VarMeasConfig) is also avoided.*

*Considering the ASN.1 impact from Alt-1, Alt-2 is more preferred, due to the avoidance of ASN.1 impact. And according to the running CR, even in Alt-1, one needs to rely on container to carry LTE RRC configuration on resource pool for measurement configuration and threshold configuration.*

***[Proposed Change]****: 1. Rely on container-based method for inter-RAT PC5-related measurement / report configuration, and 2. Report inter-RAT PC5-related measurement result in ULInformationTransferMRDC message.*

*We bring a discussion paper and draft-CRs for that R2-2002626/2627/2628.*

**Proposal in [204]**

**Proposal 8 S006: Add the F1AP information by non-critical extension of the a regular critical extension of the ULInformationTransfer message i.e. stating that when F1AP information is included, dedicatedInfoType contents is invalid and to be ignored by the network**

* Samsung thinks we don’t need new CE for the message; network can just ignore mandatory legacy fields. Ericsson agrees.
* Intel wonders why they didn’t choose a different message instead of extending existing one if none of the legacy fields can be present.
* Companies can bring CRs to next meeting to illustrate how to resolve this (e.g. different message or ignoring legacy mandatory fields)

**Proposal 9 S003, S005, B002, S046: Continue discussions regarding the signalling of the V2X information defined in NR together so that a consistent and future proof approach is taken**

* Conclusions in [204] for S003, S005, B002, S046: There seems a slight preference to not introduce any changes. It seems the signalling of the V2X information defined in NR is best discussed together so that a consistent approach is taken. Some further discussion seems desirable, also avoiding introduction of numerous additional messages in future.
* Continue discussions regarding the signalling of the V2X information defined in NR together so that a consistent and future proof approach is taken
* Ericsson thinks we should discuss this over email to next meeting. Samsung agrees.
* Discuss over email discussion until next meeting
* [109bis-e#xx][LTE/NR/ASN.1] Resolution to review issues S003, S005, B002, S046 (Samsung/Ericsson)

Discuss how to resolve the review issues S003/S006/B002/S046 and identify how the cross-RAT IE usage should work.

Intended outcome: Discussion report and CRs to 36.331 (Samsung) and 38.331 (Ericsson)

Deadline: Long (until next meeting)

2nd week Online

Issues agreed in [204]: H115, Z301, Z311, Z307,Z309

|  |  |  |  |
| --- | --- | --- | --- |
| No | Flagging Company | Remarks | Status |
| H115 | Huawei | We do not agree with rapporteur PropTdoc. We propose to change to PropNoAct  This should be captured by the eMTC RRC CR rapporteur based on the RAN1 spreadsheet in email discussion [AT109bis-e][408][eMTC] 36.331 CR | Minutes: ConcAgree, class 3 (develop TP and capture in MTC CR) |
| Z301 | Huawei | The first bullet needs correction because of name changes but we prefer not to move the contents in order to reduce unnecessary changes between Rel-15 and Rel-16 specifications.  In general, the more changes we do to EUTRA measurements, as in Rel-15, in Rel-16, the more likely we will by mistake introduce diverging behaviour between Rel-15 and Rel-16 UEs for this feature, which can create problems to use this feature. | Conclusion: Class to be changed 3 and Status to DiscMail  >Issue is best concluded together with the discussion on the proposal 4 from R2-2003395, that is raised in eMail#32 (i.e. related to how we capture the agreement that receipt of a frequency list within release, also if this concerns NR freqs only, would means UE will not take LTE freq listed in SIB) |
| Z311 | Huawei | On the change: The agreement is about inclusion of reconfigurationWithSync. Since the field description already mentions the contents of the contained message, it can be captured there that when restoreSCG is included, the network always includes this field including an RRCReconfiguration with secondaryCellGroup and reconfigurationWithSync.  On the status: If moved to DCCA session, the status should be PropNoAct | Conclusion: Status to be changed to DiscMail  >Issue is already class 3. Seems best to do consistent for LTE and NR. Assume there will also be general discussion on how to handle conditions with implications for parent fields (under wings of NR RRC) |
| Z307 | Huawei | If moved to DCCA session, the status should be PropNoAct | Conclusion: Class to be changed to 3  >Issue seems covered by OL #32 RRC issues (same with the RILs 308, 302) |
| Z309 | Huawei | Support the rapporteur proposal but would like to remove everything else from the field description (covered in procedure text). | Conclusion: Proposed agreement will be updated to clarify intention was to remove everything else |
|  |  |  |  |

* H115: ConcAgree, Class 3 (MTC CR)
* Z301: DiscMail, Class 3 (DCCA)
* Z311: DiscMail, Class 3 (DCCA)
* Z307: Class 3 (DCCA), covered by [032]
* Z309: ConcAgree with clarification that intention was to simplify only field description

Earlier proposals with new conclusion in discussion [204]:

**Qualcomm:** *H162, H163 (it is strange to have setup/release containing 2 optional Ies, looking at previous release extensions they simply use ENUMERATED {on}): Do not agree with PropAgree. See comment in the ASN.1 review file (Qualcomm v17)*

* Discussed together in email discussion [204]

H162/H163:

* Samsung thinks that we need to be able to release the overall structure.
* Qualcomm thinks the Huawei proposal costs more bits. Also RAN1 specification is affected since they would have to capture that legacy behaviour applies in case “non-interleaving” is configured.
* Qualcomm thinks NB-IoT and MTC need not use the exact same encoding.
* For both MTC and NB-IoT, no change to the current specification (i.e. different approach in NB-IoT and MTC configurations).
* For H163, use SetupRelease (as per general principle for LTE Rel-16 below)

**Proposal 3 H162: some further discussion is required (should possibly consider parameterised SetupRelease as used in NR)**

**Proposal 4 Conclude together with H163**

* Samsung thinks in NR we use parameterized type so could adopt that in LTE Rel-16 as well. Nokia agrees. Qualcomm agrees.
* Qualcomm wonders if the encoding is the same as with legacy. Nokia thinks it is.
* Huawei thinks ASN.1 is getting bigger and bigger because of complicated configurations. Should optimize. Qualcomm thinks that’s not the case. Size increase comes from other sources.
* Huawei wonders if this causes a lot of work. Samsung thinks this can be done by RRC rapporteur is fine to do it.
* Huawei wonders if we would use this also for NB-IoT ASN.1.
* Introduce parameterized type SetupRelease (as in NR RRC) for LTE from Rel-16 onwards. Add guideline as well (can discuss exact contents but should be as close to NR principle).
* Use the SetupRelease in all WI-specific CRs for LTE Rel-16.

New proposals from discussion [204]:

**Proposal 1 N016: Do not use prefix gwus for subfields of GWUS related IEs e.g. GWUS-TimeParameters, GWUS-ResourcePerGapConfig**

* Do not use prefix gwus for subfields of GWUS related IEs e.g. GWUS-TimeParameters, GWUS-ResourcePerGapConfig. (This means the same field has to be used in the same way in all cases where it is used.)

**=> Discuss based on contributions in next meeting whether to apply this to PUR**

**Proposal 10 Q601: Maintain IE VictimSystemType-v16xy and move optional to this level. Apply the new victim system (Navic) also applies for AffectedCarrierFreqCombInfoMRDC, as shown.**

* Ericsson wonders if we need to do something for the field optionality. Qualcomm clarifies that the list requires optionality inside the IE.
* Maintain IE VictimSystemType-v16xy and move optional to this level (i.e. no OPTIONAL at parent level). Apply the new victim system (Navic) also applies for AffectedCarrierFreqCombInfoMRDC, as shown.

**Proposal 2 H114: Some further discussion required (although Huawei proposal to adopt the simplified structure and move PUR-Config subfields pur-TimeAlignmentTimer and pur-RSRP-ChangeThreshold seemed fine)**

* Huawei thinks the IE TA-ValidationConfig-r16 is not needed

H116 Issue is illustrated below

TA-ValidationConfig-r16 ::= SEQUENCE {

pur-TimeAlignmentTimer-r16 CHOICE {

release NULL,

setup ENUMERATED {sXX, sYY, ffs}

} OPTIONAL, --Need ON

pur-RSRP-ChangeThreshold-r16 CHOICE {

release NULL ,

setup SEQUENCE {

rsrp-IncreaseThresh-r16 RSRP-ChangeThresh-r16,

rsrp-DecreaseThresh-r16 RSRP-ChangeThresh-r16 OPTIONAL --Need OP

}

} OPTIONAL --Need ON

}

* Remove IE TA-ValidationConfig-r16 (not needed)
* Use Need OR with single field for pur-TimeAlignmentTimer (no setup-release)
* Use SetupRelease for the pur-RSRP-ChangeThreshold (both for MTC and NB-IoT)

**Issue Z601 (Tdoc R2-2003268):** Class 2 issue but not discussed.

* Postponed to next meeting (should resubmit document to LTE general ASN.1 session)

*Withdrawn*

[R2-2003389](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003389.zip) General ASN.1 issues for 36.331 Rel-16 (S001- S006) Samsung Telecommunications discussion Rel-16 Late Withdrawn

[R2-2003392](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003392.zip) ASN.1 Review file (LTE) Samsung Telecommunications draftCR Rel-16 36.331 16.0.0 F TEI16 Late Withdrawn

[R2-2003393](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003393.zip) 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

LS from RAN1 on UE feature lists for LTE (NTT DOCOMO)

[R2-2002550](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002550.zip) 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

(moved from 6.0.3)

## 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).

By Web Conf

*Rapporteur input: Stage-2 corrections:*

[R2-2003777](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003777.zip) Correction on introduction of DAPS handover China Telecommunications CR Rel-16 36.300 16.1.0 1279 - B LTE\_feMob Late

- LGE thinks the “PDCP state” is ambiguous. Should use “PDCP state variables”.

- Qualcomm wonders why we have the UP handling in LTE Stage-2 but not in NR Stage-2. Intel thinks this was seen as Stage-3 details. Apple also thinks we should reflect this to NR.

=> Use “PDCP state variables” instead of “PDCP state”

=> With this change, the CR is agreed in principle in R2-2003858.

=> Rapporteur can provide proposal on how/what to capture in NR Stage-2 for next meeting.

[R2-2003262](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003262.zip) 36300CR for Introduction of Even futher Mobility enhancement in E-UTRAN ChinaTelecom CR Rel-16 36.300 16.1.0 1278 - B LTE\_feMob

=> Withdrawn

*Rapporteur input: UE capabilities*

[R2-2003263](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003263.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003370.zip) UE Capability for Rel-16 LTE even further mobility enhancement Intel Corporation draftCR Rel-16 36.331 16.0.0 LTE\_feMobs-Core

* [Post109bis-e][LTE MOB] UE capabilities for NR mobility (China Telecom)

Intended outcome: Discuss remaining issues with UE capabilities for LTE mobility based on RAN1 input and updates from RAN2#109bis-e (if any)

Deadline: Long (until next meeting)

CR finalization

* [AT109bis-e][212][LTE MOB] RRC CR (Ericsson)

Scope:

* + - LTE mobility RRC CR capturing DAPS and CHO changes agreed in this meeting

Intended outcome:

* + - In-principle agreed 36.331 CR for LTE mobility
    - Final CR can be provided in [R2-2003852](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003852.zip) (LTE RRC)

Deadlines for providing comments and for rapporteur inputs:

* + - Deadline for companies' feedback: Wednesday 2020-04-29 10:00 UTC
    - Deadline for rapporteur's version for agreement: Thursday 2020-04-30 10:00 UTC

Status: Not yet started

**Thursday web converence:**

This discussion is planned to be triggered now.

### 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 [Post109bis-e#11][MOB] Resolving open issues for DAPS (Intel)*

Contributions on issues already resolved by the email discussion Post109bis-e#11][MOB] are discouraged.

Tdoc Limitation per company: 1 tdoc

By Web Conf

*Including UP-related outcome of email discussion [Post109bis-e#11][MOB] Resolving open issues for DAPS (Intel)*

[R2-2003371](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003371.zip) Report of 109b#11 open issues on DAPS Intel Corporation discussion Rel-16 LTE\_feMob-Core, NR\_Mob\_enh-Core

**=> Noted**

**Proposals to be discussed:**

MAC Summary:

11 companies provided feedback.

8 companies think no flagging is needed.

Proposal S3.9/S2.1-2 is flagged. One company expresses concern about it, i.e. no RACH towards source cell is needed after RACH towards target is successful.

Proposal S3.7-2 is flagged. One company thinks UE should be allowed to transmit data in MSG3 in case of CFRA. And whether we need to distinguish the case with/without the change of security key is also mentioned by one company.

**Discussion**

***(flagged)*** *Proposal S2.1-2: UE switches the UL PDCP data transmission upon successful RACH procedure (i.e. Msg.B for 2-step RACH).*

***(flagged)*** *Proposal S3.9: Follow proposal S2.1-1, RACH is allowed to source after RACH towards target is successful.*

- Qualcomm thinks RA to source cell would mean UE handling RA collisions. This is just extra complexity. Intel thinks RAN1 is already discussing simultaneous RA and they already agreed source is dropped in that case. Nokia agrees. We allow full MAC functionality for both source and target, this would be extra effort to preclude such cases. Qualcomm thinks RAN1 is discussing general UL collisions for source and target. Ericsson thinks RAN1 discussed RA in target cell, not in source cell.

**Agreements**

S3.9: RACH is allowed to source after RACH towards target is successful but it is up to RAN1 whether something is specified for the source RA + target UL collisions or left up to UE implementation. (No more RAN2 discussion on this until RAN1 decides.)

S2.1-1: All the functions in Figure 4.2.2-1 will be supported by the source and target MAC entity in DAPS HO.

S2.1-2: UE switches the UL PDCP data transmission upon successful RACH procedure (i.e. Msg.B for 2-step RACH).

S3.7-2: Forbid data transmission of non-DAPS DRBs in MSG3 for CBRA.

*-* Samsung thinks transmission of data in Msg3 is a rare case. Qualcomm thinks this is a security issue. Samsung thought PDCP re-establishment would be only triggered after RA completion.

- Ericsson wonders if this only matters when the key is changed. Qualcomm thinks both cases.

PDCP Summary:

11 companies provide feedback.

3 companies think no flagging is needed.

Proposal S2.2-1-1 is flagged. One company thinks it will introduce additional delay for DL transmission of UM DRBs.

Proposal S2.3-5-1 is flagged by 5 companies. Companies show their concern about security risk and large number of outstanding packets in UL window.

Proposal S2.6-2 is flagged. One company believes keeping PDCP SN continuity for UL RLC UM will result in additional latency.

Proposal S2.6.5-3 is flagged. As one company thinks the Reordering\_PDCP\_RX\_COUNT is updated only when there is at least one stored PDCP SDU.

Proposal S3.2 is flagged. As one company points out that it would be better to be optional.

Proposal S3.12 is flagged. One company thinks enhancing PDCP Status Reporting is needed to make target cell send all packets starting from FMC.

**Agreements**

S2.6-2: Keep original agreement that RLC UM (UL/DL) with PDCP SN number continuity is supported for DAPS.

S2.2-1-1: The PDCP status report (to avoid packet duplication) for DL UM DRBs is needed for DAPS HO.

S3.2: PDCP status report for UM is mandatory to support for DAPS capable UE.

S3.2b: Secondary PDCP status report for AM is mandatory to support for DAPS capable UE.

**RLC**

***(flagged)*** *Proposal* *S2.6-2: Keep original agreement that RLC UM (UL/DL) with PDCP SN number continuity is supported for DAPS.*

* NEC thinks this only increases the delay since there are no retransmissions with UM. Target has to wait for reordering timer to expire so this increases delay. LGE thinks this will cause security problem if the key is not changed.

**PDCP: Status report**

***(flagged)*** *Proposal S2.2-1-1: The PDCP status report for DL UM DRBs is needed for DAPS HO.*

* OPPO thinks this introduces AM mode for UM and will introduce an additional delay.
* MediaTek is fine to support this since it’s about duplication due to early data forwarding. Status report enables to avoid duplication from source and target, not to avoid sending lost packets. Ericsson, LGE and Nokia agree.

***(flagged)*** *Proposal S3.2: PDCP status report for UM is mandatory for DAPS capable UE.*

* LGE thinks both UM and AM need to support status report. Intel thinks there’s nothing new for AM. Could discuss whether secondary status report for AM is mandatory or not.

***(flagged)*** *Proposal S3.12: Do not introduce special handling on PDCP status report to support DAPS HO.*

* Qualcomm thinks some enhancements may be needed. Have a contribution on the topic.

**Following were not discussed online but will be handled in 2nd phase of offline discussion [205]:**

**PDCP: Reordering**

***(flagged)*** *Proposal S2.6-5-3: Reordering\_PDCP\_RX\_COUNT is set to the COUNT value associated to RX\_HFN and Next\_PDCP\_RX\_SN upon PDCP reconfiguration for LTE UM DRB and LTE AM DRB without reordering from normal PDCP to DAPS PDCP.*

**PDCP: RoHC**

***(flagged)*** *Proposal S2.3-5-1: For DAPS DRBs, keep original agreements,i.e. separate RoHC context shall be applied for the source and target link even if DAPS handover is performed without key change*

Meanwhile, companies also raise UP related comments in this email thread, including:

1. In which ROHC mode (U, O-mode only or all modes) target/source should keep IR state also needs to be discussed.
2. Updates on Proposal S2.6-5-1 and Proposal S2.6-5-2.
3. It needs to be discussed about how to handle compressed PDCP SDUs stored in reception buffer at PDCP re-establishment (R2-2002864).

**Non-flagged topics** (block agreement)

* Samsung thinks UM/AM are incorrect in the following:
  + S2.6-5-1: Reordering\_PDCP\_RX\_COUNT used for AM DRB reordering is needed for DAPS DRB.
  + S2.6-5-2: Last\_Submitted\_PDCP\_RX\_SN and Reordering\_PDCP\_RX\_COUNT used for AM DRB reordering are needed for DAPS DRB.

**Agreements**

S2.2-2-1: The second PDCP status report for DL UM DRBs is not needed for DAPS HO.

S2.6-5-1: Reordering\_PDCP\_RX\_COUNT used for AM DRB reordering is needed for DAPS AM DRB.

S2.6-5-2: Last\_Submitted\_PDCP\_RX\_SN and Reordering\_PDCP\_RX\_COUNT used for AM DRB reordering are needed for DAPS UM DRB.

S2.6-5-4: Last\_Submitted\_PDCP\_RX\_SN is set to [(Next\_PDCP\_RX\_SN-1) modulo (Maximum\_PDCP\_SN+1)] upon PDCP reconfiguration for LTE UM DRB from normal PDCP to DAPS PDCP.

S2.6-5-5: For the change from DAPS PDCP to the normal PDCP upon the source release, the reordering function is still maintained.

S2.6-3: Do not introduce discard indication in source from PDCP to RLC upon UL switching.

S3.7-3: Discard timer is maintained during DAPS HO:

S2.3-5-2: For DAPS HO, capture PDCP handling for SRB in PDCP specification, the detailed text can be further discussed when capture it in PDCP specification.

S2.6-1: Leave the issue on uplink duplicated PDCP SDUs to RAN3.

S2.6-4: Leave the disucssion on PDCP anchor relocation in DAPS to RAN3.

**Further discussion needed:**

*Further discussion:*

Summary:

11 companies provide feedback on how to make progress, i.e. online or offline.

For PHR open issue:

Online: 7 companies, the reason is that the majority view is not clear and thus online discussion/decision would be beneficial.

Offline: 4 companies, the reason is that the PHR can benefit from further technical discussion which is best carried out offline.

For ROHC IR open issue:

Online: 6 companies, because it is difficult to have consensus on this issue via offline discussion.

Offline: 5 companies, because the RoHC IR issue has already been extensively discussed and we can just follow the majority’s view.

**MAC: PHR reporting**

***(flagged)*** *Disc S2.3-7: To be discussed whether to support PHR reporting in another node;*

***Option 1****: reuse LTE and NR PHR MAC CE (NR: Multiple Entry PHR MAC CE in Figure 6.1.3.9-1; LTE: DC PHR MAC CE in Figure 6.1.3.6b-1;) 8 companies*

***Option 2:*** *new MAC CE to support PHR reporting in another node;*

***Option 3:*** *do not support PHR reporting in another node; 7 companies*

**PDCP: IR packet transmission**

***(flagged)*** *Disc S2.2-3-1: To be discussed whether to capture in the PDCP specification that “the target cell maintain the IR state in U-mode and O-Mode during DAPS handover”*

***(flagged)*** *Disc S2.2-3-2: Do not capture in the PDCP specification that “the source cell maintain the IR state in U-mode and O-Mode during DAPS handover”*

*Remaining UP issues*

[R2-2002590](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002590.zip) Open issues for user plane aspects of DAPS HO Ericsson discussion Rel-16 NR\_Mob\_enh-Core

*Proposal 1 Introduce support for PDCP status reporting for DRBs mapped on RLC UM during a DAPS handover.*

*Proposal 2 Only uplink transmission of PDCP Status Report for DRBs mapped on RLC UM need to be supported.*

*Proposal 3 Introduce a new field for configuration of the second (secondary) PDCP Status Report, thus only the first (primary) PDCP Status Report (sent at UL transmission switch) is configured with StatusReportRequired.*

*Proposal 4 No need to specify support for a secondary PDCP Status Report for a DAPS bearer mapped on RLC UM.*

*Proposal 5 When a UE uses 2-step RA to access the target cell during a DAPS HO, reception of a subsequent downlink assignment PDCCH transmission addressed to the UE’s C-RNTI in the target cell and successful decoding of the transport block transmitted on the allocated PDSCH resources and processing of an Absolute Timing Advance Command MAC CE included in the transport block triggers the UE to switch the UL DRB transmissions to the target cell.*

*Proposal 6 During DAPS handover, in the case of fallback from 2-step RA to 4-step RA when the UE used a CFRA preamble in the MsgA transmission, the UE switches the UL DRB transmissions from the source cell to the target cell upon reception of a MsgB containing a fallbackRAR MAC subPDU matching the UE’s preamble transmission.*

*Proposal 7 During DAPS handover, in the case of fallback from 2-step RA to 4-step RA when the UE used a CBRA preamble in the MsgA transmission in the target cell, the UE switches the UL DRB transmissions from the source cell to the target cell upon reception of a Msg4 addressed to the UE’s TC-RNTI including an UL grant for a new transmission.*

*Proposal 8 Capture the switch of UL DRB transmission during DAPS handover through the above indicated amendment to section 5.3.5.3 in TS 38.331. This covers both the case where 4-step RA is used and the case where 2-step RA is used.*

*Proposal 9 The combination of DAPS handover and RACH-less access in the target cell should be supported in LTE.*

*Proposal 10 During DAPS handover, the UE only reports the power headroom of the target PCell in the PHR sent to the target node (and similarly for the PHR sent to the source node).*

[R2-2003330](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003330.zip) On Remaining Issues for DAPS UP Nokia, Nokia Shanghai Bell discussion Rel-16

*Proposal 1: For downlink, maintaining the header compression protocol IR state in U-mode and O-mode during DAPS handover is up to source and target cells.*

*Proposal 2: RAN2 to discuss the feasibility of potential solution of mandating the source and target cells to send IR packets during DAPS handover if same security key is re-used.*

*Proposal 3: RAN2 to confirm the original agreement that RLC UM (UL/DL) with PDCP SN number continuity is supported for DAPS.*

*Proposal 4: Do not support PHR reporting in another node for DAPS HO.*

[R2-2002874](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002874.zip) Remaining user plane issues of DAPS vivo discussion Rel-16 LTE\_feMob-Core

*Observation 1: The multiple entry PHR should be reported at the addition of the target PCell.*

*Observation 2: In the multiple entry PHR of NR, the specification needs to clarify whether the field “PH (Type 1, PCell)” refers to the source PCell or the target PCell.*

*Observation 3: In the Dual Connectivity PHR of LTE, the specification needs to clarify whether the field “PH (Type 1, PCell)”, the field “PH (Type 2, PCell)” and the field “PH (Type 2, PSCell)” refers to the source PCell or the target PCell.*

*Proposal 1: The target PCell of the DAPS handover is considered as the PSCell for the PHR report.*

*Proposal 2: The UL RLC UM entity is always configured when the PDCP status report is configured for the RLC UM DRB.*

*Proposal 3: The current PDCP status report format is reused for the RLC UM.*

*RoHC handling:*

[R2-2003045](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003045.zip) 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

*Observation 1: according to RAN3 BL CR, all downlink SDUs should be forwarded to target from source, and source can inform discarding of already successfully transmitted SDUs, which helps target to refresh storage buffer and determine which SDUs should be sent to UE.*

*Observation 2: RAN2 agree to introduce a PDCP status report for DAPS AM DRB, it can also help target determine the first SDU which should be sent to UE.*

*Observation 3: due to transmission delay of PDCP status report and continuous downlink transmission of data from source, the first several PDCP PDUs will be discarded, which means this duplicate discarding makes ROHC context totally missing in UE side.*

*Observation 4: for U-mode and O-mode ROHC compressor can enter into FO state from IR state without any ACK received, so specification intervention is still needed.*

*Observation 5: since ROHC context has been established in UE for source, and data from source may not be much after random access towards target is completed, it can be left up to ROHC protocol to fall back to IR state if needed.*

*Proposal 1: RAN2 confirm to specify “For downlink, the ROHC protocol of the target cell maintains the IR state if operating in U-mode and O-mode during DAPS handover.”*

*Proposal 2: If companies don’t prefer to get specific ROHC mode involved, RAN2 to specify “For downlink, the ROHC protocol of the target cell maintains the IR state during DAPS handover.”*

[R2-2003665](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003665.zip) RoHC handling for inter-gNB and intra-gNB DAPS handover SHARP Corporation discussion Rel-16 LTE\_feMob-Core

[R2-2002589](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002589.zip) RoHC handling during DAPS handover without key change Ericsson discussion Rel-16 NR\_Mob\_enh-Core [R2-2000126](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2000126.zip)

*(moved from 6.9.1)*

[R2-2002863](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002863.zip) Discussion on consecutive ROHC failure LG Electronics Inc. discussion NR\_Mob\_enh-Core

*(moved from 6.9.1)*

[R2-2002864](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002864.zip) Handling of compressed PDCP SDUs stored in reception buffer LG Electronics Inc. discussion LTE\_feMob-Core

*PDCP status reporting*

[R2-2002608](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002608.zip) PDCP Status Reporting enhancements for DAPS DRBs Qualcomm India Pvt Ltd discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

[R2-2002737](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002737.zip) PDCP Status Report for UM DRBs in DAPS HO MediaTek Inc. discussion

[R2-2002953](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002953.zip) Discussion on PDCP status report for UM DRB OPPO discussion Rel-16 NR\_Mob\_enh-Core

*Security aspects*

[R2-2002997](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002997.zip) Handling of security issue for DAPS without key change NEC discussion Rel-16 LTE\_feMob-Core

[R2-2003042](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003042.zip) Discussion on DAPS HO without key change Huawei, HiSilicon discussion Rel-16 NR\_Mob\_enh-Core

*(moved from 6.9.1)*

*Other:*

[R2-2002799](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002799.zip) Non-DAPS DRB Handling when fallback to source Apple discussion NR\_Mob\_enh-Core

*(moved from 6.9.1)*

* Handled in email discussion [205]

By Email

* [AT109bis-e][205][MOB] Flagging and discussion of DAPS UP open issues for PDCP/RLC/MAC (Huawei)

Scope:

* + - Companies flagging critical DAPS UP issues requiring Web conference discussion
    - Discuss the remaining UP open issues identified in email discussion report of Post109#11 in [R2-2003371](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003371.zip).

Intended outcome:

* + - Discussion summary document in [R2-2003845](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003845.zip), including resolutions to open issues and identification of non-critical issues that should no longer be pursued in Rel-16

Deadlines for flagging issues for Web conference discussion:

* + - Flagging of issues for the Web conference: Tuesday 2020-04-21 10:00 UTC
    - Rapporteur summary: Tuesday 2020-04-21 11:30 UTC

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Thursday 2020-04-23 10:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003845](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003845.zip)): Friday 2020-04-24 08:00 UTC
    - Proposed agreements in [R2-2003845](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003845.zip) indicated for email agreement and not challenged until Tuesday 2020-04-28 12:00 UTC will be declared as agreed by the session chair.

Status: Started

* Huawei indicates some RoHC issues require online discussion.

*Conclusion:*

*The following issues have been identified as Critical, and based on majority’s view Rapporteur would like to suggest the observations and proposals as below:*

***F1: ROHC handling in case of DAPS HO without key change***

*Observation 1: 16 out of 19 companies agree “for DAPS handover without key change, there is a security risk when same key stream is applied to retransmitted SDUs with different ROHC compression headers”. 3 companies think this security issue has not been elaborated on, and not sure if it is serious or not.*

*Proposal 1: RAN2 to discuss if an LS needs to be sent to SA3, and ask SA3 to confirm if there is a security risk when same key stream is applied to retransmitted SDUs with different ROHC compression headers.*

*Observation 2: For solutions there is no clear majority to converge, so further discussion is needed, e.g. how to handle retransmitted SDUs and new SDUs.*

*Proposal 2: RAN2 to further discuss how to handle ROHC if the security issue is confirmed.*

* Ericsson is concerned about sending LS due to timeframe – it takes at least one meeting to progress. Should progress on the technical solutions. Huawei indicates next SA3 meeting is May 11th so we could receive feedback before next RAN2 meeting.
* Qualcomm indicates there could be some additional UE processing.

***D1: Downlink ROHC IR packets in case of DAPS HO with key change***

*Proposal 5: capture in the PDCP specification that “target cell maintains the IR state during DAPS handover with key change.” (13 out of 18 companies support, 2 out of 18 companies also can accept, 3 companies oppose)*

*Proposal 6: if P5 is agreed, the CR detail (e.g. if to mention specific ROHC mode) can be further discussed in PDCP CR offline discussion. (13 out of 18 companies support)*

*Proposal 7: RAN2 to confirm that “Do not capture in the PDCP specification that the source cell maintain the IR state in U-mode and O-Mode during DAPS handover with key change” (16 out of 18 companies support)*

* Qualcomm wonders what is broken in network if we mandate this. Ericsson thinks this limits network implementation as there could be other ways to handle this. We don’t need to mandate.
* Nokia thinks there are other solutions for this. RoHC might never be used.
* Huawei thinks this is the only solution and sending IR packets happens for a short time only. QC agrees.
* Samsung thinks this is the simplest solution.
* MediaTek sending IR packets is not always necessary. Could just capture that handling this is left up to network.
* Intel wonders if we have a problem if we don’t have packet duplication.

Agreements

1 RAN2 to progress solution to avoid that same key stream is applied to retransmitted SDUs with different ROHC compression headers. (Companies should bring contributions to next meeting)

Proposal 5: capture in the PDCP specification that “target cell maintains the IR state during DAPS handover with key change.” (13 out of 18 companies support, 2 out of 18 companies also can accept, 3 companies oppose)

Proposal 6: if P5 is agreed, the CR detail (e.g. if to mention specific ROHC mode) can be further discussed in PDCP CR offline discussion. (13 out of 18 companies support)

Proposal 7: RAN2 to confirm that “Do not capture in the PDCP specification that the source cell maintain the IR state in U-mode and O-Mode during DAPS handover with key change” (16 out of 18 companies support)

????

**Agreements???**

* Do not introduce special handling on PDCP status report to support DAPS HO.
* Reordering\_PDCP\_RX\_COUNT is set to the COUNT value associated to RX\_HFN and Next\_PDCP\_RX\_SN upon PDCP reconfiguration for LTE UM DRB and LTE AM DRB without reordering from normal PDCP to DAPS PDCP.
* Do not support PHR reporting in another node
* How to handle compressed PDCP SDUs stored in the reception buffer at PDCP re-establishment is not discussed in Rel-16 anymore

*The following issues have been identified as Non-Critical, and based on majority’s view Rapporteur would like to suggest the proposals as below:*

*F2: PDCP status report to reflect holes from Source NB before DAPS HO*

*Proposal 3: RAN2 to confirm that “Do not introduce special handling on PDCP status report to support DAPS HO.” (17 out of 18 companies support)*

*F3: LTE specific PDCP handling*

*Proposal 4: RAN2 to confirm that “Reordering\_PDCP\_RX\_COUNT is set to the COUNT value associated to RX\_HFN and Next\_PDCP\_RX\_SN upon PDCP reconfiguration for LTE UM DRB and LTE AM DRB without reordering from normal PDCP to DAPS PDCP.” (17 out of 18 companies support)*

*D2: PHR reporting in another node*

*Proposal 8: RAN2 to confirm that “do not support PHR reporting in another node.” (13 out of 17 companies support)*

*E1: how to handle compressed PDCP SDUs stored in reception buffer at PDCP re-establishment (R2-2002864).*

*Proposal 9: RAN2 to confirm that the issue “How to handle compressed PDCP SDUs stored in the reception buffer at PDCP re-establishment” is not pursued. (15 out of 18 companies support)*

CR finalization

*Updated CRs for MAC and PDCP:*

[R2-2002868](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002868.zip) CR on 36.321 for LTE feMob vivo CR Rel-16 36.321 16.0.0 1468 - F LTE\_feMob-Core

[R2-2002869](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002869.zip) CR on 38.321 for NR mobility enhancement vivo CR Rel-16 38.321 16.0.0 0710 - F NR\_Mob\_enh-Core

[R2-2003043](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003043.zip) PDCP CR on correction and outcome of [Post109bis-e#11] for DAPS handover Huawei, HiSilicon, Mediatek Inc. CR Rel-16 38.323 16.0.0 0045 - C NR\_Mob\_enh-Core

*(moved from 6.9.1)*

[R2-2003044](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003044.zip) PDCP CR on correction and outcome of [Post109bis-e#11] for DAPS handover Huawei, HiSilicon, Mediatek Inc. CR Rel-16 36.323 16.0.0 0282 - C LTE\_feMob-Core

*(moved from 6.9.1)*

* Handled in email discussion [213] and [214]
* [AT109bis-e][213][MOB] PDCP CRs for LTE and NR (Huawei)

Scope:

* + - PDCP CRs for LTE and NR DAPS corrections agreed in this meeting

Intended outcome:

* + - In-principle agreed 36.323 and 38.323 CR for LTE and NR mobility based on changes agreed in this meeting
    - Final CRs can be provided in [R2-2003853](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003853.zip) (NR PDCP) and [R2-2003854](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003854.zip) (LTE PDCP)

Deadlines for providing comments and for rapporteur inputs:

* + - Deadline for companies' feedback: Wednesday 2020-04-29 10:00 UTC
    - Deadline for rapporteur's version for agreement: Thursday 2020-04-30 10:00 UTC

Status: Not yet started

* [AT109bis-e][214][MOB] MAC CRs for LTE and NR (vivo)

Scope:

* + - MAC CRs for LTE and NR DAPS corrections agreed in this meeting

Intended outcome:

* + - In-principle agreed 36.321 and 38.323 C1 for LTE and NR mobility based on changes agreed in this meeting
    - Final CRs can be provided in [R2-2003855](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003855.zip) (NR MAC) and [R2-2003856](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003856.zip) (LTE MAC)

Deadlines for providing comments and for rapporteur inputs:

* + - Deadline for companies' feedback: Wednesday 2020-04-29 10:00 UTC
    - Deadline for rapporteur's version for agreement: Thursday 2020-04-30 10:00 UTC

Status: Not yet started

#### 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 [Post109bis-e#11][MOB] Resolving open issues for DAPS (Intel).*

Contributions on issues already resolved by the email discussion Post109bis-e#11][MOB] are discouraged.

Tdoc Limitation per company: 1 tdoc

By Web Conf

*Including CP-related outcome of email discussion [Post109bis-e#11][MOB] Resolving open issues for DAPS (Intel).*

[R2-2003371](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003371.zip) Report of 109b#11 open issues on DAPS Intel Corporation discussion Rel-16 LTE\_feMob-Core, NR\_Mob\_enh-Core

**Proposals to be discussed online:**

*Proposal S2.4: T312 in source is stopped upon executing a reconfiguration with sync even if DAPS is configured; No specificiation impact.*

* Intel clarifies this is the same as in current specification regardless of DAPS use.

*Proposal S2.6-5-6: Do not introduce bye message from UE to the source upon UL switching.*

* Chair indicates this was already agreed before.

*Proposal S3.1: LTE DAPS+ LTE RACH-less is not allowed.*

* Ericsson thinks this is already supported so more changes are needed. Qualcomm thinks this is more complexity and doesn’t benefit latency. Nokia thinks there may be issues with UL switching co-existence since that occurs at RACH completion. Intel agrees and thinks we should specify UL switching time for this to work.

*Disc S2.3-6: To be discussed whether source can provide both original and downgrade source configuration to target;*

* Intel indicates this means that source could provide 2 configurations to target: One for current one and one to use during DAPS. That could allow target to choose legacy HO instead of DAPS. OPPO thinks the baseline should be one configuration only. Providing two would take time to specify. Source can always choose what to signal. LGE agrees and thinks legacy HO command is just created based on full UE capabilities. CATT agrees that we can retain legacy principles. Nokia agrees and thinks 2 configurations may have impact to RAN3. Intel agrees. Samsung agrees and thinks this is not critical. Ericsson thinks that providing both configurations could create ambiguities in case downgrading occurs to UE before the HO.
* Huawei would like 2 configurations and we can just name them differently in signalling. This allows network to choose what to send. Qualcomm thinks source may have to downgrade if this is not supported. NEC thinks the original configuration can be useful for the target when source is released. Qualcomm thinks the only downside is Xn impact.
* Chair proposes to go with legacy since the WI completion should happen.

**Not discussed online (continue during email in this meeting)**

*RRC S3.11: To discuss whether Network can trigger the subsequent HO after a DAPS HO before source cell has been released. If yes, whether source is released in the new HO command.*

*Disc S3.8: To discuss whether the coordination on maxSCH-TB-BitsDL, maxSCH-TB-BitsUL is needed for NR since for NR the supported max DL/UL data rate for each CC can be derived from the L1 parameters included in the FeatureSet (according to the calculation defined in 38.306 4.1)*

*RRC S3.10: To discuss whether a new bit in RRC is needed to control second PDCP status report.*

**Online it was pointed this conflicts with another agreement (discuss further if something can be done)**

*RRC S3.6: Change the handling on SRB for DAPS based on the below order:*

1. *Regardless of security key change,*

* *Establish a PDCP entity for the target with state variables continuation as specified in TS 38.323 [5], with the same configuration, the state variables and security configuration as the PDCP entity for the source;*

1. *If reestablishPDCP for SRB is configured(i.e. security key change)*

* *The state variables will be reset by PDCP re-establishement.*

1. *Otherwise, the state variables are left as those of the source due to no PDCP re-establishment and it implies the case without security key change*

**Agreements**

T312 in source is stopped upon executing a reconfiguration with sync even if DAPS is configured; No specificiation impact.

Do not introduce bye message from UE to the source upon UL switching

LTE DAPS+ LTE RACH-less is not allowed

We stick to legacy that source only provides one configuration to target in Rel-16.

**For bulk agreement**

*RRC S2.2-1: Condition for statusReportRequired should be changed to Rlc-AM-UM “For RLC AM or RLC UM ( if dapsConfig is configured for this bearer), the field is optionally present, need R. Otherwise, the field is absent.”.*

*RRC S2.3-2: moreThanoneRLC is not applied for DAPS HO, remove the EN “FFS on moreThanonRLC in pdcp-Config” and clarify in the field description “This field is not present if dapsConfig is configured for this bearer.”*

*RRC S2.3-5-3: For DAPS HO, reestablishPDCP is not needed for SRB, no matter whether key is changed or not.*

*RRC S2.3-1: Do not capture in specification “stop RLM in source after RACH successful to target PCell”, and remove the EN “TBC on how/whether to capture stop RLM in source after RACH successful to target PCell”.*

*RRC S3.3: Agree below RRC changes:*

*3> consider radio link failure to be detected for the source MCG i.e. source RLF;*

*~~4~~3> suspend all DRBs in the source;*

*~~4~~3> release the source connection.*

*RRC S2.3-3: Agree below principle on the terminoligy and to be confirmed in ASN.1 review, e.g. whether to change source/target to source/target MCG;*

***Case 1*** *L1 configuration: “source or target" should be used since it is cell specific configuration;*

***Case*** *2 MAC/RLC/PDCP (Key, security/ROHC)/SDAP configuration: “source or target" could be used since they are common for all cells of source or target;*

***Case*** *3 C-RNTI, timers (e.g. T301, T310, T311) and constants (e.g. N310, N311): “source/target SpCell” should be used since it is PCell configuration;*

***Case*** *4 BCCH/MIB (5.3.5.5.2): “source/target SpCell” should be used since it is PCell configuration;*

***Case*** *5 RLF, and “revert back to the configuration used in source PCell”: “source/target SpCell” should be used since we only RLF in PCell instead of SCells;*

***Case*** *6 “revert back to the configuration used in source PCell”: “source PCell” could be used as legacy;*

***Case*** *7 SRB/DRB, RRM: “source or target" could be used since they are common for all cells of source or target;*

*RRC S2.5-1: To capture RAN1 parameters p-DAPS-FR1, p-DAPS-FR2 and UplinkPowerSharingDAPS-HO-mode and name them as “p-DAPS-Source, p-DAPS-Target and UplinkPowerSharingDAPS-HO-mode”*

*RRC S2.5-2: powerControlMode in HO preparation message ischanged to ENUMERATED {semi-static-mode1, semi-static-mode2, dynamic }*

*RRC S3.4-1: Do not add 2> If dapsConfig is configured for any DRB when capturing UL switching indication in RRC;*

*RRC S3.4-2: To discuss whether to UL switching indication in RRC as*

*3> for each DRB configured with dapsConfig, request uplink data switching to the PDCP entity, as specified in TS 38.323 [5];*

*RRC S2.3-8-1: When resume SRB upon DAPS HO failure, the old stored RRC message if any, (i.e.. the PDCP PDUs for SRB) shall be discarded;*

*RRC S3.5: Do not try to align the handling of SRB and non-DAPS DRB upon receiving DAPS HO command and upon fallback;*

*RRC S3.7-1: For non-DAPS DRB handling, do not agree that PDCP only reestablishment when RACH is successfully completed in target:*

**RRC impacts affecting ASN.1 review:**

***MAC/RLC/PDCP configuration***

*RRC S2.2-1: Condition for statusReportRequired should be changed to Rlc-AM-UM “For RLC AM or RLC UM ( if dapsConfig is configured for this bearer), the field is optionally present, need R. Otherwise, the field is absent.”.*

*RRC S2.3-2: moreThanoneRLC is not applied for DAPS HO, remove the EN “FFS on moreThanonRLC in pdcp-Config” and clarify in the field description “This field is not present if dapsConfig is configured for this bearer.”*

*RRC S2.3-5-3: For DAPS HO, reestablishPDCP is not needed for SRB, no matter whether key is changed or not.*

***RLM operation***

*RRC S2.3-1: Do not capture in specification “stop RLM in source after RACH successful to target PCell”, and remove the EN “TBC on how/whether to capture stop RLM in source after RACH successful to target PCell”.*

*RRC S3.3: Agree below RRC changes:*

*3> consider radio link failure to be detected for the source MCG i.e. source RLF;*

*~~4~~3> suspend all DRBs in the source;*

*~~4~~3> release the source connection.*

***RRC terminology***

*RRC S2.3-3: Agree below principle on the terminoligy and to be confirmed in ASN.1 review, e.g. whether to change source/target to source/target MCG;*

***Case 1*** *L1 configuration: “source or target" should be used since it is cell specific configuration;*

***Case*** *2 MAC/RLC/PDCP (Key, security/ROHC)/SDAP configuration: “source or target" could be used since they are common for all cells of source or target;*

***Case*** *3 C-RNTI, timers (e.g. T301, T310, T311) and constants (e.g. N310, N311): “source/target SpCell” should be used since it is PCell configuration;*

***Case*** *4 BCCH/MIB (5.3.5.5.2): “source/target SpCell” should be used since it is PCell configuration;*

***Case*** *5 RLF, and “revert back to the configuration used in source PCell”: “source/target SpCell” should be used since we only RLF in PCell instead of SCells;*

***Case*** *6 “revert back to the configuration used in source PCell”: “source PCell” could be used as legacy;*

***Case*** *7 SRB/DRB, RRM: “source or target" could be used since they are common for all cells of source or target;*

***UL PC***

*RRC S2.5-1: To capture RAN1 parameters p-DAPS-FR1, p-DAPS-FR2 and UplinkPowerSharingDAPS-HO-mode and name them as “p-DAPS-Source, p-DAPS-Target and UplinkPowerSharingDAPS-HO-mode”*

*RRC S2.5-2: powerControlMode in HO preparation message ischanged to ENUMERATED {semi-static-mode1, semi-static-mode2, dynamic }*

***UL Tx switching***

*RRC S3.4-1: Do not add 2> If dapsConfig is configured for any DRB when capturing UL switching indication in RRC;*

*RRC S3.4-2: To discuss whether to UL switching indication in RRC as*

*3> for each DRB configured with dapsConfig, request uplink data switching to the PDCP entity, as specified in TS 38.323 [5];*

***DRB/SRB handling***

*RRC S2.3-8-1: When resume SRB upon DAPS HO failure, the old stored RRC message if any, (i.e.. the PDCP PDUs for SRB) shall be discarded;*

*RRC S3.5: Do not try to align the handling of SRB and non-DAPS DRB upon receiving DAPS HO command and upon fallback;*

*RRC S3.6: Change the handling on SRB for DAPS based on the below order:*

1. *Regardless of security key change,*

* *Establish a PDCP entity for the target with state variables continuation as specified in TS 38.323 [5], with the same configuration, the state variables and security configuration as the PDCP entity for the source;*

1. *If reestablishPDCP for SRB is configured(i.e. security key change)*

* *The state variables will be reset by PDCP re-establishement.*

1. *Otherwise, the state variables are left as those of the source due to no PDCP re-establishment and it implies the case without security key change*

*RRC S3.7-1: For non-DAPS DRB handling, do not agree that PDCP only reestablishment when RACH is successfully completed in target:*

**Further discussion proposed:**

***Source cell handling during DAPS HO***

*Disc S2.3-6: To be discussed whether source can provide both original and downgrade source configuration to target;*

*RRC S3.11: To discuss whether Network can trigger the subsequent HO after a DAPS HO before source cell has been released. If yes, whether source is released in the new HO command.*

*Disc S3.8: To discuss whether the coordination on maxSCH-TB-BitsDL, maxSCH-TB-BitsUL is needed for NR since for NR the supported max DL/UL data rate for each CC can be derived from the L1 parameters included in the FeatureSet (according to the calculation defined in 38.306 4.1)*

*RRC S3.10: To discuss whether a new bit in RRC is needed to control second PDCP status report.*

*CR based on email discussion outcome:*

[R2-2003372](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003372.zip) 38.331 CR on NR MOB Intel Corporation draftCR Rel-16 38.331 16.0.0 NR\_Mob\_enh-Core

[R2-2002860](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002860.zip) 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

[R2-2002591](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002591.zip) Subsequent RRC Procedures after DAPS handover Ericsson discussion Rel-16 NR\_Mob\_enh-Core

[R2-2002875](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002875.zip) Remaining control plane issues of DAPS vivo discussion Rel-16 LTE\_feMob-Core

[R2-2002952](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002952.zip) Correction on DAPS HO OPPO draftCR Rel-16 38.331 16.0.0 F NR\_Mob\_enh-Core

[R2-2003046](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003046.zip) Discussion on control plane aspects of DAPS HO Huawei, HiSilicon discussion Rel-16 LTE\_feMob-Core

[R2-2003108](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003108.zip) Remaining control plane issues for DAPS Nokia, Nokia Shanghai Bell discussion Rel-16 LTE\_feMob-Core

[R2-2003502](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003502.zip) Discussion on network coordination and PHR report for DAPS HO CMCC. discussion Rel-16 LTE\_feMob-Core

[R2-2003530](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003530.zip) Indication of DAPS Handover Execution to the Source ETRI discussion Rel-16 LTE\_feMob-Core, NR\_Mob\_enh-Core

* Handled in email discussion [206]
* [AT109bis-e][206][MOB] Flagging and discussion of DAPS CP open issues for RRC (Intel)

Scope:

* + - Companies flagging critical DAPS CP issues requiring Web conference discussion
    - Discuss the remaining CP/RRC open issues identified in email discussion report of Post109#11 in [R2-2003371](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003371.zip).

Intended outcome:

* + - Discussion summary document in [R2-2003846](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003846.zip), including resolutions to open issues and identification of non-critical issues that should no longer be pursued in Rel-16

Deadlines for flagging issues for Web conference discussion:

* + - Flagging of issues for the Web conference: Tuesday 2020-04-21 10:00 UTC
    - Rapporteur summary: Tuesday 2020-04-21 11:30 UTC

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Thursday 2020-04-23 12:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003846](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003846.zip)): Friday 2020-04-24 08:00 UTC
    - Proposed agreements in [R2-200384](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003842.zip)6 indicated for email agreement and not challenged until Tuesday 2020-04-28 12:00 UTC will be declared as agreed by the session chair.

Status: Started

**Issues flagged in email discussion**

RRC S3.10

RRC S3.11

Disc S2.3-6

Proposal S3.1

**Updates in email discussion on 22.4.2020:**

***RRC S3.11:*** *To discuss whether Network can trigger the subsequent HO after a DAPS HO before source cell has been released. If yes, whether source is released in the new HO command.*

*6 companies: Huawei, HiSilicon, OPPO, Nokia, LG, Intel*

***Yes: 5***

***NO:4***

***If support, explicit release by new target: 5***

***Disc S2.3-6:*** *To be discussed whether source can provide both original and downgrade source configuration to target;*

*6 companies: QC, OPPO, Nokia, ZTE, LG, Intel*

***Option 1****: source can provide both original and downgrade source configuration to target; 8 companies;*

***Option 2:*** *source only provide a single source configuration as legacy; 9 companies*

***Proposal S3.1:*** *LTE DAPS+ LTE RACH-less is not allowed.*

*1 companies: Ericsson, Not supporting this combination therefore actually involves more work since we have to explicitly forbid this combination.*

***Allow LTE DAPS+LTE RACH-less***

***Yes: 2***

***No:10***

***RRC S3.10****: To discuss whether a new bit in RRC is needed to control second PDCP status report.*

*1 company: Ericsson*

*Rapporteur: it is related to the discussion on second PDCP status report for UM, it would be good to confirm that first.*

***Jointly: 5***

***Individually:*** *5*

*Furthermore, in the email discussion, one company raised the comments that there is confliction between*

*RRC S3.6: Change the handling on SRB for DAPS based on the below order:*

1. *Regardless of security key change,*

* *Establish a PDCP entity for the target with state variables continuation as specified in TS 38.323 [5], with the same configuration, the state variables and security configuration as the PDCP entity for the source;*

1. *If reestablishPDCP for SRB is configured(i.e. security key change)*

* *The state variables will be reset by PDCP re-establishement.*

1. *Otherwise, the state variables are left as those of the source due to no PDCP re-establishment and it implies the case without security key change*

*RRC S2.3-5-3: For DAPS HO, reestablishPDCP is not needed for SRB, no matter whether key is changed or not.*

***Rapporteur assume this can be done via further offline discussion.***

*In addition, one company raised issue on Align the terminology of “DAPS” between PDCP and RRC*

*In the current specficiation for PDCP and RRC, the terminology for “DAPS” and is not aligned between them. With this reason, we provide the contribution (R2-2002860) to clean up the terminology. We think that it should be discussed.*

***Rapporteur*** *tends to agree this. But it can be done via offline discussion.*

#### 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002592.zip) Inter-node signalling for DAPS handover Ericsson discussion Rel-16 NR\_Mob\_enh-Core

[R2-2002905](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002905.zip) Consideration on DAPS Capability LG Electronics Inc. discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core

[R2-2003047](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003047.zip) Discussion on open issues for UE capability coordination Huawei, HiSilicon discussion Rel-16 LTE\_feMob-Core

[R2-2003367](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003367.zip) Discussion on capabilities for MOB Intel Corporation discussion Rel-16 LTE\_feMob-Core, NR\_Mob\_enh-Core

* To be confirmed during the meeting: Handled in post-meeting email discussion

Withdrawn:

[R2-2003030](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003030.zip) UE capabilities for DAPS Nokia, Nokia Shanghai Bell discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-Core Late

### 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003040.zip) Correction CR for conditional handover including RIL E901 Ericsson CR Rel-16 36.331 16.0.0 4243 - F LTE\_feMob-Core

* Handled in email discussion [210] (see AI 6.9.5)

## 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.

By Email

[R2-2003842](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003842.zip) Summary of LTE contributions in AIs 7.4, 7.5, 7.6, 7.8 and 7.9 Nokia (RAN2 vice-chair) discussion Late

* [AT109bis-e][203][LTE16] LTE Rel-16 CR discussion (RAN2 VC)

Scope:

* + - Covering discussion of contributions in AIs 7.4, 7.5, 7.6, 7.8 and 7.9
    - Discuss whether the CRs in [R2-2003546](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003546.zip), [R2-2003547](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003547.zip) can be endorsed as baseline for UE capabilities of DL MIMO efficiency enhancements for LTE.
    - Discuss if the intent of [R2-2002888](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002888.zip) is agreeable. If needed, provided updated revision to CR [R2-2002887](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002887.zip).
    - Discuss which approach can resolve the identified problem: Re-interpretation of existing signalling ([R2-2003545](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003545.zip)) or addition of new signalling ([R2-2003364](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003364.zip)).

Intended outcome:

* + - Discussion summary document in [R2-2003842](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003842.zip), detailing which CRs can be agreed in principle and summary of offline discussion comments
    - Final versions of in-principle agreeable CRs (by each CR proponent)

Deadlines for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): Thursday 2020-04-23 12:00 UTC
    - Initial deadline (for rapporteur's summary in [R2-2003842](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003842.zip)): Friday 2020-04-24 08:00 UTC
    - Proposed agreements in [R2-2003842](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003842.zip) indicated for email agreement and not challenged until Tuesday 2020-04-28 12:00 UTC will be declared as agreed by the session chair.

Status: Not yet started (to be done Monday Apr. 20th)

RLC out-of-order delivery:

[R2-2002887](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002887.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2002888.zip) LTE RLC out-of-order delivery configuration Samsung, LG Electronics Inc., Nokia, Nokia Shanghai Bell, Intel, Apple discussion TEI16

* Handled in email discussion [203]

## 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.

By Email

UE capabilities for the DL MIMO WI:

[R2-2003546](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003546.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003547.zip) 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

* Handled in email discussion [203]

## 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.

By Email

Handling of 0.37 kHz SCS configuration:

[R2-2003364](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003364.zip) 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](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003544.zip) Discussion on MCCH configuration for 0.37kHz SCS Huawei, Hisilicon discussion

[R2-2003545](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109bis-e/Docs/R2-2003545.zip) Clarification on MCCH configuration for 0.37kHz SCS Huawei, Hisilicon CR Rel-16 36.331 16.0.0 4271 - F LTE\_terr\_bcast-Core

* Handled in email discussion [203]