3GPP TSG-RAN WG2 Meeting #115 electronic [R2-2108831](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108831.zip)

Online, August, 2021

**Agenda item: 10.1**

**Source: Vice Chairman (Nokia)**

**Title: Report on LTE legacy, 71 GHz, DCCA, Multi-SIM and RAN slicing**

**Document for: Approval**

# Organizational

**List of offline email discussions:**

**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)**

**Organizational**

* [AT115-e][200] Organizational – LTE legacy, 71 GHz, DCCA, Multi-SIM and RAN slicing (RAN2 VC)

Scope:

* + - Share plans for the meetings and list of ongoing email discussions for the sessions
		- Share meetings notes and agreements for review and endorsement
		- Flag LSs and in-principle agreed CRs for discussion

      Intended outcome (for LS discussion):

* + - General information sharing about the sessions

      Deadline for providing comments to LSs:

* + - Deadline: 2nd week Mon, UTC 0900

**LTE Legacy** **(kicked off at meeting start)**

* [AT115-e][201][LTE] Miscellaneous LTE CRs (Samsung)

Scope:

* + - Discuss LTE CRs marked for this discussion (if needed)

 Intended outcome:

* + - Discussion report in [R2-2108851](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108851.zip)
		- Agreeable CRs (if any)

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 1st week Thu, UTC 0900
		- Initial deadline (for rapporteur summary): 1st week Thu, UTC 1700
		- Deadline for CR finalization: 2nd week Wed, UTC 0900

**LTE Rel-17**

* [AT115-e][202][LTE/NR] Inclusive language (Ericsson)

Scope:

* + - Draft LS (To: SA5, RAN3, CT, SA; Cc: RAN) according to RAN2 decisions on inclusive language alignment between WGs and TSGs

 Intended outcome:

* + - Agreeable LS in [R2-2108853](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108853.zip)

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 2nd week Thu, UTC 0900
		- Deadline for final LS: 2nd week Thu, UTC 1200

**NR Extension to 71 GHz**

***(None scheduled)***

**NR Rel-17 DCCA**

* [AT115-e][220][R17 DCCA] Bearer handling of SCG deactivation (Samsung)

Scope:

* + - Discuss the Bearer handling of SCG (de)activation based on online discussion

 Intended outcome:

* + - Discussion summary in [R2-2108862](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108862.zip) (by email rapporteur).

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 1st week Fri, UTC 0900
		- Initial deadline (for rapporteur summary): 2nd week Mon, UTC 1000
* [AT115-e][223][R17 DCCA] Network-triggered SCG activation (Huawei)

Scope:

* + - Discuss if we can combine solutions 1 (*the UE performs BFD and RLM based on previously activated TCI states ("implicit configuration") while the SCG is deactivated*) and 2 (*the network uses information from L3 measurement reports*) from [R2-2108444](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108444.zip). Attempt to clarify how each option works and what are their commonalities and differences. Should clarify how network knows UE has valid TA and correct TCI state.

 Intended outcome:

* + - Discussion summary in [R2-2108865](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108865.zip) (by email rapporteur).

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 2nd week Mon, UTC 1200
		- Initial deadline (for rapporteur summary): 2nd week Tue, UTC 1200

**NR Rel-17 DCCA (started after 2nd week Monday session)**

* [AT115-e][221][R17 DCCA] LS to RAN3 on CPAC (Ericsson)

Scope:

* + - Inform RAN3 about the RAN2 decisions on inter-node RRC container design for CPAC

 Intended outcome:

* + - Draft LS out in [R2-2108863](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108863.zip).

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 2nd week Thu, UTC 0900

**NR Rel-17 Multi-SIM**

* [AT115-e][230][MUSIM] Discussion on AS vs. NAS-based busy indication (Intel)

Scope:

* + - Discuss details required to reply to SA2/CT1 and draft the reply LS

 Intended outcome:

* + - Draft LS to SA2/CT1 in [R2-2108856](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108856.zip) (by email rapporteur).

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 1st week Wed, UTC 0900
		- Initial deadline (for draft LS): 1st week Wed, UTC 1700

**NR Rel-17 RAN Slicing**

* [AT115-e][240][Slicing] Reply LS to SA2 on band-specific slices in cell reselection (Nokia)

Scope:

* + - Draft reply LS to SA2 LS [R2-2106972](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106972.zip) ([S2-2105158](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_145E_Electronic_2021-05/Docs/S2-2105158.zip)).

 Intended outcome:

* + - Draft LS to SA2/CT1 in [R2-2108860](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108860.zip) (by email rapporteur).

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 1st week Thu, UTC 1000
		- Initial deadline (for final draft LS): 1st week Fri, UTC 0900

**Dates and deadlines – Elections**

August 9th 0900 UTC Elections Start. If there is only one nominee per position voting will not be needed.

**Dates and deadlines – Technical Meeting**

August 5th 23.59 PDT (August 6th 06.59 UTC) Tdoc number allocation deadline.
Tdoc Submission Deadline. Kick off, summaries. Deadline long Post114-e email discussions (hopefully the report can be available at the deadline or not long after).

August 12th 0700 UTC Tdocs submission deadline for Summaries

August 16th 0700 UTC e-Meeting Start (by email) (August 17th 0700 UTC is first possible email deadline).

August 20th 1000 UTC Weekend break, Suspend decision making in email discussions (= no deadlines etc)

 It should be possible for a delegate to take the weekend off, rejoin and not miss decisions.

August 23rd 0800 UTC Resume after weekend. Resume decision making in email discussions.

August 27th 1000 UTC e-Meeting Stop, no more email comments for AT-meeting email discussions. Decision confirmations
 announced within 24h. Session notes for email checking.

September 3rd Deadline Short Post115-e email discussions (note that the time to RP is short).

**Web Conference Schedule**

Note that this schedule is indicative and can change. After Week 1 the schedule for Week 2 will be updated. No Overtime, Hard stop at UTC 15.55 and UTC 05:10

**WEEK 1:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time ZoneUTC** | **Web Conference R2 - Main** | **Web Conference R2 - BO1** | **Web Conference R2 - BO2** |
| **Monday** |  |  |  |
| 12:15-13:05 | Main session (Johan)[1] Announcement (2 min)[3] Inc LS.CP corrections: [6.1.4.1.1] CHO, [6.1.4.1.5] CandidateBeamRSList, [6.1.4.3] n77, [6.1.4.5] RRM relax[5.4.1.1] Common Fields,NR17 Other: [8.22] BCS5/4 (if time)UP corrections: [6.1.3] UL skip, UCI pdu handling.  | NR16 Pos (Nathan)[6.3.2] [6.3.3] [6.3.1] | NR17 NTN, non-pos aspects (Sergio)- [8.10.1]- [8.10.2.1]- [8.10.2.2]- [8.10.2.3] |
| 13:05-14:25 | NR17 Multi-SIM (Tero)- [8.3.3]: Outcome of [Post114-e][243][MUSIM] Gap handling (ZTE) - [8.3.3]: Outcome of [Post114-e][242][MUSIM] Switching message details (vivo)- 8.3.4: Short online discussion, will continue in offline discussion- [8.3.1] SA2 LS on busy indication (S2-2105150), will continue in offline discussion (for LS draft)  | NR17 NTN (Sergio)- [8.10.3.1]- [8.10.3.2]- [8.10.3.3] |
| 14:25-15:45 | TEI17 (Johan)Clocked presentations and initial comments.  | 14:25-14:55: NR17 Tero Early Items- MUSIM: [8.3.x] overflow (if necessary for SA2 LS discussion)- RAN slicing [8.8.1]: discussion on whether SA2 proposal on band-specific slices in cell reselection has impacts on the RAN (cv. SA2 LS [R2-2106972](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106972.zip)) 14:55 – 15:45: NR17 SL enh (Kyeongin)[POST114-e][704][POST114-e][705] (if time allows) | LTE17 IoT (Brian) |
| **Tuesday** |  |  |  |
| 12:15-13:05 | NR17 QoE (Johan) | NR17 RAN Slicing (Tero)- [8.8.2]: At least outcome of [Post114-e][251][Slicing] Solution direction details for slice priorities in cell reselection (Lenovo) - [8.8.3]: At least outcome of [Post114-e][252][Slicing] RACH partitioning details for slicing (CMCC) - [8.8.2]: SA2 LS reply (if further discussion needed) | NR17 Small Data Enh (Diana) |
| 13:05-14:25 | NR17 eIAB (Johan) | NR16 V2X (Kyeongin) 6.2.1, 6.2.2, 6.2.3 (if time allows) | NR17 Small Data Enh (Diana) |
| 14:25-15:45 | NR17 ePowSav (Johan) | NR17 DCCA (Tero)- [8.2.2.3]: outcome of [Post114-e][231][R17 DCCA] SCG activation/deactivation options (Huawei)- [8.2.2.1]/[8.2.2.3]: UP issues (may continue in offline discussion)- [8.2.2.3]: UE request for SCG activation and other activation details- [8.2.2.2] UE measurements for deactivated SCG (may continue in offline discussion)- [8.2.3.1] Inter-node message design and reply to RAN3 LS - [8.2.3.2] outcome of [Post114-e][233][R17 DCCA] Uu Message design for CPAC (CATT) (if time allows) | NR17 SL enh (Kyeongin)[POST114-e][705][POST114-e][706] (if time allows) |
| **Wednesd** |  |  |  |
| 12:15-13:05 | NR17 eNPN (Johan) | 12:15-13:35: NR17 RedCap (Sergio)- [8.12.1]- [8.12.2.1]: including outcome of [Post114-e][105]- [8.12.2.2]:- [8.12.3.1]- [8.12.3.2] | NR17 SL Relay (Nathan)[8.7.1] [8.7.2.2] |
| 13:05-14:25 | NR17 Multicast (Johan) | 13:35-14:25: NR17 CovEnh (Sergio)- [8.19.1]- [8.19.2] | NR17 Pos (Nathan)[8.11.1] [8.11.2] [8.11.3] |
| 14:25-15:45 | NR17 Multicast (Johan) | NR17 SONMDT (HuNan) | NR17 IIOT URLLC (Diana) |
| **Thursday** |  |  |  |
| 04:00-05:00 | NR17 feMIMO (Johan) | NR17 SL Relay (Nathan)[8.7.2.3] [8.7.2.1] | LTE16e IoT (Emre, Brian)[4.2][7.2.1][7.2.2] |
| **Friday** |  |  |  |
| 04:00-05:00 | NR17 Other (Johan) | NR17 SL Relay (Nathan)[8.7.2.4] [8.7.3.1] [8.7.3.2] | LTE All releases Misc (Tero)LTE17 (Tero) - Inclusive language (SA5 LS + discussion,LS reply drafting to continue in offline [202])LTE15/16 (Tero)- Outcome of LTE offline [201]LTE17 (Tero) - TEI17 topics (timed presentations with short time for comments, some may continue in offline discussion [203])**IF NEEDED** (TBC at least 24h before the session): MUSIM/RAN slicing LS replies to SA2 |

**WEEK 2:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time ZoneUTC** | **Web Conference R2 - Main** | **Web Conference R2 - BO1** | **Web Conference R2 - BO2** |
| **Monday** |  |  |  |
| 12:15-13:05 | NR17 Other (Johan) | NR17 up to 71 GHz (Tero)- [8.20.1] Work plan and LSs - [8.20.2] UE capability differentiation for FR2-1 and FR2-2 - [8.20.2] UP impacts (RACH, RLC) - [8.20.2] Other topics (if time allows) | NR16 SONMDT (HuNan) |
| 13:05-14:25 | NR17 IoT NTN (Johan) | NR17 DCCA- [8.2.3.2] At least outcome of [Post114-e][233][R17 DCCA] Uu Message design for CPAC (CATT)  | CB Kyeongin6.2.3 (if needed)[POST114-e][706] |
| 14:25-15:45 | NR15 NR16 Main session (Johan) | NR17 RACH indication / partitioning (Diana) | NR17 Pos (Nathan)[8.11.4] [8.11.5] [8.11.6] |
| **Tuesday** |  |  |  |
| 12:15-13:05 | CB eNPN, ePowsav, QoE if needed (Johan) | CB SergioNTN CB session, including offline discussion outcomes | CB Nathan |
| 13:05-14:25 | CB eIAB, TEI17 (Johan) | CB Sergio Redcap CB session, including offline discussion outcomesCE offline discussion outcome (if any)CB Diana | CB Brian Emre  |
| 14:25-15:45 | CB Multicast, IoT NTN (Johan) | CB Diana | CB Kyeongin Come-back issues from 6.2.2 and 6.2.3[POST114-e][706] (if needed)Offline discussion outcomes (if time allows) |
| **Wednesd** |  |  |  |
| 04:00-05:00 | CB Multicast, feMIMO (Johan) | CB TeroNR17 RAN slicing - 8.8.3: Outcome of [Post114-e][252][Slicing] RACH partitioning details for slicing (CMCC)- 8.8.3: Discussion on NR17 general RACH partitioning impacts to slicing WINR17 Multi-SIM- 8.3.3: Outcome of [Post114-e][242][MUSIM] Switching message details (vivo)- Offline discussion outcomes (if any) | CB Nathan |
| **Thursday** |  |  |  |
| 04:00-05:00 | CB NR16 NR15 (Johan) | CB HuNan  | CB KyeonginOffline discussion outcomes |
| **Friday** |  |  |  |
| 04:00-05:00 | CB TBD (Johan) | CB Sergio Diana | CB TeroNR17 DCCA- 8.2.1: CPAC running Stage-2 CR- 8.2.2.1: Outcome of [AT115-e][220][R17 DCCA] Bearer handling of SCG deactivation (Samsung) (if not handled by email)- 8.2.2.1: AT115-e][223][R17 DCCA] Network-triggered SCG activation (Huawei)- Other DCCA topics- Agreeing to post-meeting email discussionsNR17 Multi-SIM- Agreeing to post-meeting email discussions - 8.3.3: MUSIM Gap handling - is RAN4 LS needed?- 8.3.4: Way forward with Paging with service indication- Other MUSIM topicsNR17 RAN slicing - Agreeing to post-meeting email discussions- Other RAN slicing topics |

# 4 EUTRA corrections Rel-15 and earlier

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

Only essential corrections. No documents should be submitted to 4. Please submit to 4.x

## 4.5 Other LTE corrections Rel-15 and earlier

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

Purely editorial corrections should be avoided, text enhancements may be deprioritized. Corrections should be taken up with the specification editor before submitting to avoid CR duplication. If this is not done, the contribution may not be treated.

By Email [201] (3)

[R2-2108312](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108312.zip) On T330 resetting Ericsson, ZTE Corporation, Sanechips CR Rel-15 36.331 15.14.0 4712 - F LTE\_5GCN\_connect-Core

* [201] No Rel-16 Cat A is needed since this aligns Rel-15 with existing Rel-16 specification
* [201] Use TEI15 for the WI code and explain in cover page that CR is not about introducing the logged MDT feature for a UE in RRC INACTIVE but, it makes sure that UE shall continue to perform logging of MDT when the UE is transitioned to RRC IDLE by the network.
* [201] Add the current and proposed behaviour according to offline discussion in [R2-2108851](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108851.zip) to the cover page.
* Revised according to above in [R2-2108852](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108852.zip)

[R2-2108852](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108852.zip) On T330 resetting Ericsson, ZTE Corporation, Sanechips CR Rel-15 36.331 15.14.0 4712 1 F TEI15 [R2-2108312](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108312.zip)

* [201] Agreed

[R2-2108634](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108634.zip) Minor changes collected by Rapporteur for Rel-15 Samsung CR Rel-15 36.331 15.14.0 4718 - F LTE\_eMTC4-Core, LTE\_sTTIandPT, LTE-L23

* [201] Additional corrections according to offline discussion in [R2-2108851](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108851.zip) to be added to the CR
* Revised in [R2-2108866](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108866.zip)

[R2-2108635](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108635.zip) Minor changes collected by Rapporteur for Rel-16 Samsung CR Rel-16 36.331 16.5.0 4719 - A LTE\_eMTC4-Core, LTE\_sTTIandPT, LTE-L23

* [201] Additional corrections according to offline discussion in [R2-2108851](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108851.zip) to be added to the CR
* Revised in [R2-2108867](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108867.zip)

[R2-2108866](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108866.zip) Minor changes collected by Rapporteur Samsung (rapporteur) CR Rel-15 36.331 15.14.0 4718 1 F LTE\_eMTC4-Core, LTE\_sTTIandPT, LTE-L23 [R2-2108634](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108634.zip)

* [201] Agreed

[R2-2108867](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108867.zip) Minor changes collected by Rapporteur Samsung (rapporteur) CR Rel-16 36.331 16.5.0 4719 1 A A LTE\_eMTC4-Core, LTE\_sTTIandPT, LTE-L23, TEI16, LTE\_eMTC5-Core, NB\_IOTenh3-Core, NR\_newRAT-Core [R2-2108635](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108635.zip)

* [201] Agreed

Email discussions ([201])

* [AT115-e][201][LTE] Miscellaneous LTE CRs (Samsung)

Scope:

* + - Discuss LTE CRs marked for this discussion (if needed)

 Intended outcome:

* + - Discussion report in [R2-2108851](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108851.zip)
		- Agreeable CRs (if any)

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 1st week Thu, UTC 0900
		- Initial deadline (for rapporteur summary): 1st week Thu, UTC 1700
		- Deadline for CR finalization: 2nd week Wed, UTC 0900

# 7 Rel-16 EUTRA Work Items

Essential corrections

## 7.1 EUTRA Rel-16 General

No documents should be submitted to 7.1. Please submit to.7.1.x

Purely editorial corrections should be taken up with the specification editor before submitting to avoid CR duplication. If this is not done, the contribution may not be treated.

### 7.1.1 Cross WI RRC corrections

Including RRC corrections that impact multiple WIs and require discussion in the common session.

By Email [201] (1)

[R2-2107774](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107774.zip) Correction on early security reactivation upon reception of RRCConnectionReject NEC CR Rel-16 36.331 16.5.0 4696 - F TEI16, LTE\_eMTC5-Core

* Proposed changes are agreeable but editorial, so added RRC rapporteur CR
* Merged to [R2-2108867](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108867.zip)

### 7.1.2 Feature Lists and UE capabilities

Corrections to UE capabilities should be taken up with the 36.331 and 36.306 specification editors before submitting to avoid CR duplication. If this is not done, the contribution may not be treated.

## 7.4 LTE Other WIs

(LTE\_feMob-Core; leading WG: RAN2; REL-16; started: Jun 18; Completed: June 20; WID: RP-190921)

(LTE\_terr\_bcast-Core, LTE\_DL\_MIMO\_EE-Core, LTE\_high\_speed\_enh2-Core; LTE TEI16 Non-positioning)

(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)

Including TEI16 corrections and issues that do not fit under any other topic.

Purely editorial corrections should be taken up with the specification editor before submitting to avoid CR duplication. If this is not done, the contribution may not be treated.

For LTE mobility enhancements, only corrections that are LTE-specific should be submitted to this AI. Corrections that impact or are common with NR mobility enhancements should be submitted to 6.1.X instead.

By Email [201] (1)

[R2-2108701](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108701.zip) 36.331 Correction on ReportConfigEUTRA for CHO/CPAC CATT CR Rel-16 36.331 16.5.0 4720 - F LTE\_feMob-Core

* intent is agreed with the proposal discussed in [R2-2108851](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108851.zip) added, i.e. the following text is used (modifications highlighted): “Event configured for conditional reconfiguration. If this field is configured, the UE shall ignore the configuration of *triggerType, reportQuantity, maxReportCells, reportInterval, and reportAmount.”*
* Revised according to above in [R2-2108854](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108854.zip)

[R2-2108854](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108854.zip) 36.331 Correction on ReportConfigEUTRA for CHO/CPAC CATT CR Rel-16 36.331 16.5.0 4720 1 F LTE\_feMob-Core [R2-2108701](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108701.zip)

* [201] Agreed

Web Conf (1st week Friday) or By Email (outcome of [201])

[R2-2108851](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108851.zip) Summary of [AT115-e][201][LTE] Miscellaneous LTE CRs (Samsung) Samsung discussion Rel-16 LTE-L23, LTE\_eMTC4-Core, LTE\_sTTIandPT, LTE\_5GCN\_connect-Core, TEI16, LTE\_eMTC5-Core, LTE\_feMob-Core

- Ericsson explains that the P1 CR was not agreed previously because we were not sure it was needed. Now it appears that R15 would be needed.

* 1: [R2-2108312](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108312.zip) will be revised and agreed with cover-page update.
* 2: [R2-2108634](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108634.zip) and [R2-2108635](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108635.zip) will be revised and agreed with adding further minor changes provided during the offline discussion.
* 3: Changes in [R2-2107774](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107774.zip) will be merged to the Rel-16 LTE RRC Rapporteur CR.
* 4: [R2-2108701](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108701.zip) will be revised and agreed with editorial update.

# 8 Rel-17 NR Work Items

## 8.2 MR DC/CA further enhancements

(LTE\_NR\_DC\_enh2-Core; leading WG: RAN2; REL-17; WID: RP-201040)

Time budget: 1 TU

Tdoc Limitation: 4 tdocs

Email max expectation: 4 threads

No documents should be submitted to 8.2. Please submit to.8.2.x

### 8.2.1 Organizational, Requirements and Scope

Including LSs and any rapporteur inputs (which do not count against Tdoc limits).

Web Conf (Tuesday 1st week) (1)

[R2-2106962](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106962.zip) Reply LS on temporary RS for efficient SCell activation in NR CA (R4-2108364; contact: Huawei) RAN4 LS in Rel-17 LTE\_NR\_DC\_enh2 To:RAN1, RAN2

* No RAN2 actions, will have post-meeting email discussion, see AI 8.2.4
* Noted

Web Conf (2nd Week Friday), running Stage-2 CR for CPAC

[R2-2108688](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108688.zip) TS 37.340 CR for CPA and inter-SN CPC CATT draftCR Rel-17 37.340 16.6.0 B LTE\_NR\_DC\_enh2-Core

- Ericsson thinks we should have new procedures for CPAC rather than append those to the existing ones. CATT thinks separate section was not needed earlier but we can of course discuss that.

- ZTE thinks these are not covering this meetings agreements yet.

- CATT also wonders if we take RRC CR.

* Baseline version, should discuss if we have a separate section for the CPAC procedures.
* [Post115-e][210][R17 DCCA] Running Stage-2 CRs for CPAC (CATT)

Scope: Updated running 37.340 CR for CPAC. Should also discuss if we have a new section for the CPAC procedures.

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][211][R17 DCCA] Running NR/LTE RRCs CR for CPAC (CATT)

Scope: Create running NR and LTE RRC CRs for CPAC.

 Intended outcome: Running CR

 Deadline: Long

Post-meeting email discussions (running CRs + UE capabilities)

* [Post115-e][212][R17 DCCA] Running NR/LTE RRCs CR for SCG deactivation (Huawei)

Scope: Create running NR and LTE RRC CRs for SCG deactivation.

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][213][R17 DCCA] Running MAC CR for SCG deactivation (vivo)

Scope: Create running MAC CR for SCG deactivation.

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][214][R17 DCCA] UE capabilities (Intel)

Scope: Discuss which (RAN2-determined) UE capabilities (for all features in this WI) are needed

 Intended outcome: Report

 Deadline: Long

* [Post115-e][215][R17 DCCA] Running Stage-2 CRs for SCG deactivation (ZTE)

Scope: Create running 37.340 CRs for SCG deactivation.

 Intended outcome: Running CR

 Deadline: Long

### 8.2.2 Efficient activation / deactivation mechanism for one SCG and SCells

No documents should be submitted to 8.2.2. Please submit to.8.2.2.x

#### 8.2.2.1 Deactivation of SCG

Including outcome of [Post114-e][231][R17 DCCA] SCG activation/deactivation options (Huawei)

Including UE assistance information for SCG deactivation

Web Conf (Tuesday 1st week) (1)

Outcome of [Post114-e][231][R17 DCCA] SCG activation/deactivation options (Huawei)

[R2-2108444](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108444.zip) [Post114-e][231][R17 DCCA] SCG activation/deactivation options (Huawei) Huawei, HiSilicon discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

*Proposal 1: Discuss which option(s) to support for RACH resources for network-initiated SCG activation:*

*1) common RACH resources;*

*2) dedicated RACH resources indicated before SCG activation indication (when going to the SCG deactivated state or while the SCG is deactivated);*

*3) dedicated RACH resources indicated in the SCG activation indication.*

- Rapporteur proposal for resolving P1 using 1) and 3):

*When the SCG is deactivated, if the network sends an RRC(Connection)Reconfiguration containing an SCG RRCReconfiguration with reconfigurationWithSync , the UE initiates random access towards the PSCell. Existing specification is the baseline (e.g. for parameters and UE behaviour).*

- Apple thinks all 3) could be allowed. Ericsson agrees but disagrees with the rapporteur proposal. Nokia agrees with Ericsson: this would mean having SCG in deactivated would not work and this might always require RACH for activation. Huawei clarifies this is effectively an activation indication and not precluding anything.

- FW thinks we should only support 1) and 3). CATT agrees and wonders if 2) provides any benefits of 2) over 3).

Show of hands

1+2+3: LGE, IDT, ZTE, vivo, Lenovo, Ericsson, QC, Convida, NEC, Samsung, Nokia, Intel, Apple (13)

1+2: - (0)

1+3: Huawei, OPPO, Futurewei, MediaTek, Sharp,. CATT, DOCOMO, Spreadtrum, Google, Interdigital, Nokia, Samsung, Intel, KDDI (14)

- Ericsson thinks this goes against allowing network to do reconfiguration at any time. Would like to configure RACH resources before activation. Huawei thinks the question is whether we do 2) or not. LGE thinks there is no difference from MAC viewpoint.

Agreements

* Support all of the following for RACH resources used in network-initiated SCG activation (at least using RRC):
* 1) common RACH resources;
* 3) dedicated RACH resources indicated in the SCG activation indication.
* FFS if we support also 2) (proponents are requested to provide CRs next time to illustrate how this can be done)

- Apple thinks network triggers activation with/without RACH and that should be a network decision. UE just follows. Wonders if network could allow cases where UE can "try" RACH according to some condition.

- Huawei clarifies option 4 is similar to SDT, which is not yet finished.

- Chair wonders if we should talk about UE or network decision instead.

Show of hands (multiple allowed):

**UE determines whether to use RACH in SCG activation:** Apple, LGE, ZTE, Samsung, Lenovo, IDT, Nokia, Sharp, Qualcomm (9)

**Network indicates whether UE uses RACH in SCG activation:** Futurewei, vivo, Convida, NEC, CATT, ZTE, KDDI, MediaTek, OPPO, Qualcomm, DCM, Intel, Ericsson (12)

**Network configures UE with RACH, UE uses configuration to determine whether to UE use RACH in SCG activation:** Qualcomm, Apple, Convida, LGE, ZTE, Futurewei, Google, IDT, Huawei, vivo, MediaTek, Ericsson (12)

Show of hands (multiple allowed):

**Support RACHless SCG activation:** Futurewei, LGE, Nokia, IDT, Apple, Lenovo, vivo, Ericsson, CATT, ZTE, Convida, Spreadtrum, KDDI, Sharp, Intel, Qualcomm (16)

**Do not support RACHless SCG activation:** DOCOMO, Samsung, OPPO, MediaTek, NEC, Google, Huawei (8)

* We will support RACHless SCG activation in Rel-17

- DCM points out we should decide on one option or not do anything. Apple wonders if NW can predict that UE has valid TA? Or which TCI UE will use? Huawei thinks network just indicates the TCI in RRC.

- Nokia thinks option 1 is a bit odd so it's not easy to understand.

Show of hands (one option only):

1: Ericsson, Lenovo, LGE, Samsung, CATT, Huawei, QC, Convida, KDDI, Sharp (10)

2: MediaTek, DOCOMO, Spreadtrum, Apple, Intel, vivo, NEC, Futurewei, Google (9)

3: OPPO, IDT (2)

4: ZTE (1)

1+2: Futurewei, Ericsson, Lenovo, Nokia, MediaTek (5)

* Do not consider options 3) and 4)
* Offline [223] (Huawei) to discuss if we can combine 1) and 2). Attempt to clarify how each option works and what are their commonalities and differences. Should clarify how network knows UE has valid TA and correct TCI state.

*Proposal 2: Select one solution for network-triggered SCG activation \*without\* RACH among the 4 listed options:*

*1) the UE performs BFD and RLM based on previously activated TCI states ("implicit configuration") while the SCG is deactivated. The UE can use these beams/TCI states at SCG activation if beam/radio link failure was not detected by the UE before SCG activation (similar to operation when resuming from DRX). FFS: UE reports in case of beam/radio link failure and UE/network behaviour after reporting beam/radio link failure.*

*2) the network uses information from L3 measurement reports (similar to SCell activation)*

*3) the network uses L1 measurement reports (similar to switching from dormant to non-dormant BWP). FFS reporting on PUCCH (periodic)/ via MCG before activation decision or at activation decision*

*4) SDT-like method: the UE performs uplink transmission using a grant associated with a good DL RS (network provides UL grants (associated with beams) together with a RSRP threshold to UE, UE selects the UL grant when associated SSB RSRP is above threshold (same method used in SDT))*

*Proposal 3a: Discuss the feasibility and complexity of solution 3 (SCG activation upon RACH/SR towards the SCG) without contacting the MN) so that it can be made faster than solution 1 or solution 2 for SCG activation triggered by UL data transmission.*

 *Proposal 3b: Discuss whether to support solution 3 for MCG link recovery without RRC re-establishment.*

*Proposal 4 : Discuss solutions 1), 2) and 3) for UE-requested SCG deactivation.*

*1) Assistance information: the UE reports that it would like the SCG to be deactivated.*

*2) Deactivation request / response: the UE reports that it would like the SCG to be deactivated and the network replies to the UE whether it accepts or rejects the request.*

*3) Report preference between deactivation and release: the network can configure the UE to indicate its preference between SCG deactivation and SCG release.*

*4) Inactivity timer: the UE can be configured with an inactivity timer and the SCG is deactivated if the timer expires, i.e. no traffic for a certain period (note: unlike 1, 2 and 3, there is no notification to the network).*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *1) UE assistance information* | *2) Deactivation request / response* | *3) Report preference between deactivation and release* | *4) Inactivity timer* |
| *Benefits* | *- Allows the UE to reduce resources, e.g. to save power* | *- Allows the UE to use SCG resources for another purpose (e.g. another subscription)* | *- Allows the UE to indicate the best method to save power according to UE implementation or current preference* | *- Saves DL signalling for SCG deactivation* |
| *Specification impact* | *- Existing framework could be reused* *- Needs to decide the details of the indication* | *- Need to specify configuration, indication and response* | *- Need to decide whether to use the UE assistance information or a new indication, and specify the details* | *- Existing sCellDeactivationTimer could be reused, with little modifications (FFS whether it covers PSCell only or all SCG serving cells)* |
| *Drawbacks* | *- More uplink signalling overhead than 2)**- This method is unsuitable if the UE wishes to take some action depending whether the network accepts the request now or not (e.g. to determine whether it is possible to use for another subscription hardware resources now used for the SCG)* | *- This method is less appropriate than 1) if the UE can wait an undetermined time for the SCG deactivation* |  | *- Does not allow to modify the UE configuration at SCG deactivation, unless that configuration is signalled previously and stored* |

Web Conf (Tuesday 1st week), Bearer handling (1)

UP details: Bearer handling for SCG deactivation

[R2-2107669](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107669.zip) Bearer handling for SCG deactivation Samsung discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 1. SRB3 is suspended upon SCG deactivation, if configured.*

*Proposal 2. For SRB3, the old RRC message is discarded upon SCG deactivation, if any.*

*Proposal 3. The SCG RLC bearer of split DRB and duplication DRB is suspended upon SCG deactivation, if configured.*

*Proposal 4. The normal SCG DRB is suspended upon SCG deactivation, if configured.*

*Proposal 5. The security key update is up to network implementation upon SCG activation from deactivation.*

*Proposal 6. The normal SCG DRB is resumed after RLC/PDCP re-establishment upon SCG activation, if security key is updated.*

*Proposal 7. The normal SCG DRB is resumed without RLC/PDCP re-establishment upon SCG activation, if security key is not updated.*

*Proposal 8. The transmitting PDCP entity of the normal SCG DRB discards PDCP PDUs upon SCG deactivation.*

*Proposal 9. The receiving PDCP entity of the normal SCG DRB stops t-Reordering if running and deliver the stored PDCP SDUs to upper layer upon SCG deactivation.*

* Discuss bearer handling in deactivated SCG (e.g. proposals in [R2-2107669](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107669.zip)) in offline [220] (Samsung)

[R2-2108445](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108445.zip) Remaining issues on UE-requested SCG deactivation Huawei, HiSilicon discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107018](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107018.zip) Discussion on SCG deactivation for RRC\_INACTIVE UE OPPO discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107422](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107422.zip) Deactivation of SCG Qualcomm Incorporated discussion Rel-17

[R2-2107663](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107663.zip) DC power sharing for deactivated SCG Samsung discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107983](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107983.zip) Deactivation of SCG Nokia, Nokia Shanghai Bell discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108091](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108091.zip) Deactivation of SCG LG Electronics discussion Rel-17

[R2-2108165](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108165.zip) Details of SCG deactivation China Telecommunications discussion Rel-17

[R2-2108330](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108330.zip) Comparison of SCG deactivation solutions Convida Wireless other Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2106039](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106039.zip)

[R2-2108388](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108388.zip) Efficient SCG (de)activation Ericsson discussion LTE\_NR\_DC\_enh2-Core

[R2-2108488](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108488.zip) Deactivation of SCG InterDigital discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108530](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108530.zip) Discussions on deactivation of SCG CMCC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108678](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108678.zip) UE Assistance Information for SCG deactivation SHARP Corporation discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108691](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108691.zip) Discussion on Deactivation of SCG CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108813](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108813.zip) Discussion on deactivation of SCG NTT DOCOMO INC. discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

Email discussions ([220], [223])

* [AT115-e][220][R17 DCCA] Bearer handling of SCG deactivation (Samsung)

Scope:

* + - Discuss the Bearer handling of SCG (de)activation based on online discussion

 Intended outcome:

* + - Discussion summary in [R2-2108862](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108862.zip) (by email rapporteur).

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 1st week Fri, UTC 0900
		- Initial deadline (for rapporteur summary): 2nd week Mon, UTC 1000
* [AT115-e][223][R17 DCCA] Network-triggered SCG activation (Huawei)

Scope:

* + - Discuss if we can combine solutions 1 (*the UE performs BFD and RLM based on previously activated TCI states ("implicit configuration") while the SCG is deactivated*) and 2 (*the network uses information from L3 measurement reports*) from [R2-2108444](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108444.zip). Attempt to clarify how each option works and what are their commonalities and differences. Should clarify how network knows UE has valid TA and correct TCI state.

 Intended outcome:

* + - Discussion summary in [R2-2108865](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108865.zip) (by email rapporteur).

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 2nd week Mon, UTC 1200
		- Initial deadline (for rapporteur summary): 2nd week Tue, UTC 1200

Web Conf (2nd week Friday) outcomes of [220] and [223]) (2)

[R2-2108862](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108862.zip) Summary of [AT115-e][220][R17 DCCA] Bearer handling of SCG deactivation (Samsung) Samsung discussion Rel-17 LTE\_NR\_DC\_enh2-Core

- Intel thinks key reuse principles from SA3 are sufficient for P5. No LS needed.

* 5. The security key update is up to network implementation upon SCG activation from deactivation.

- LGE thinks the main point is about PDCP entity suspension. If we do, then COUNT is reset and we need to avoid keystream repeat. We can discuss formulation once we decide. OPPO agrees.

- Huawei thinks we can allow UE-based activation in either option. Not sure we need anything for SRB3.

- Samsung explains this is about UL data processing.

- Nokia thinks P5 also means PDCP entity is not suspended. We need to decide if we allow UE-initiated activation. Rest is more about modelling.

Option 1:

- Nokia thinks we should allow UE-initiated activation. Shouldn't preclude it now. Ericsson thinks UE should be allowed to do UL data processing. Option 2 is not clear for split bearers. QC thinks UL data processing is allowed in both options.

- LGE thinks we can just agree PDCP entity is not suspended. No reason to prohibit UL data processing

- Samsung thinks data loss can happen at UE if we allow UL data processing during SCG deactivation. In R15 we said UE cannot process data when bearer is suspended. PDCP re-establishment can discard data for UM. LGE thinks UM allows lossy transmission.

- CATT thinks NW can decide whether to resume SRB3. What happens to data at that point?

* PDCP entity is not suspended at SCG deactivation for at least AM DRB. FFS for Stage-3 details
* UL data processing is not prohibited during SCG deactivation for at least AM DRB. FFS for Stage-3 details
* UL data transmission to SCG is prohibited during SCG deactivation. FFS for Stage-3 details
* UE-initiated activation is still FFS.

*Proposal 1. Upon SCG deactivation (if configured), discuss*

*- Option 1: Suspend SCG transmission of SRB3 (i.e. SCG failure like wording style, which allows UL data processing in RLC and PDCP entity when UL data arrives during SCG deactivation)*

*- Option 2: Suspend SRB3 (i.e. RRC INACTIVE like wording style, which does not allow UL data processing in RLC and PDCP entity when UL data arrives during SCG deactivation)*

*Proposal 2. Discuss if the old RRC message for SRB3 is discarded after SCG has been deactivated, if any.*

*If the wording style of Option 1 is agreed in Proposal 1, then RAN2 can just agree to suspend SCG transmission of DRBs upon SCG deactivation (i.e. Option 1) for Proposal 3, 4-1, and 4-2 unless there is objection.*

*Proposal 3. Discuss how to handle SN terminated SCG bearer upon SCG deactivation:*

*- Option 1: Suspend SN terminated SCG bearer upon SCG deactivation (or suspend SCG transmission of DRB), if configured.*

*- Option 2: Network ensures that SN terminated SCG bearer is not configured before/upon SCG deactivation.*

*- Option 3: SN terminated SCG bearer is kept alive upon SCG deactivation, i.e. do nothing.*

*Proposal 4-1. Discuss how to handle SCG RLC bearer of MN terminated bearer upon SCG deactivation:*

*- Option 1: Suspend SCG RLC bearer of MN terminated bearer upon SCG deactivation (or suspend SCG transmission of DRB), if configured.*

*- Option 2: Network ensures that SCG RLC bearer of MN terminated bearer is not used before/upon SCG deactivation, e.g. reconfiguration to another bearer or release or ul-DataSplitThreshold with infinity value and primary path to MCG.*

*- Option 3: SCG RLC bearer of MN terminated bearer is kept alive upon SCG deactivation, i.e. do nothing.*

*Proposal 4-2. Discuss how to handle SCG RLC bearer(s) of duplication bearer upon SCG deactivation:*

*- Option 1: Suspend SCG RLC bearer(s) of duplication bearer upon SCG deactivation (or suspend SCG transmission of DRB), if configured.*

*- Option 2: Network ensures that SCG RLC bearer(s) of duplication bearer is not used before/upon SCG deactivation, e.g. deactivation of PDCP duplication.*

*- Option 3: SCG RLC bearer(s) of duplication bearer is kept alive upon SCG deactivation, i.e. do nothing.*

*Proposal 5. The security key update is up to network implementation upon SCG activation from deactivation.*

*If the wording style of Option 1 is agreed in Proposal 1, then RAN2 can just agree to resume SCG transmission of DRBs upon SCG activation unless there is objection:*

*Proposal 6. Resume SN terminated SCG bearer after RLC/PDCP re-establishment (e.g. based on reestablishRLC and reestablishPDCP indicators) upon SCG activation, if security key is updated.*

*Proposal 7. Resume SN terminated SCG bearer without RLC/PDCP re-establishment (e.g. based on reestablishRLC and reestablishPDCP indicators) upon SCG activation, if security key is not updated.*

*If suspension (Option 1) is agreed in Proposal 3, 4-1, or 4-2, then RAN2 discuss the following proposals:*

*Proposal 8. Discuss if the transmitting PDCP entity of SN terminated SCG bearer discards PDCP PDUs upon SCG deactivation.*

*Proposal 9. Discuss if the receiving PDCP entity of SN terminated SCG bearer stops t-Reordering if running and delivers the stored PDCP SDUs to upper layer upon SCG deactivation.*

[R2-2108865](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108865.zip) Summary of [AT115-e][223][R17 DCCA] Network-triggered SCG activation (Huawei) Huawei discussion Rel-17 LTE\_NR\_DC\_enh2-Core

- Apple is fine to P1-3 even though they think TAT may not be so useful. But P4 creates lot of complexity as it doesn't help the UE.

- OPPO is fine with P1-3. P4 is OK but could be clearer that it only considers PSCell.

* 1: The TAT associated with the PSCell continues running when the SCG is switched from activated to deactivated state and the UE considers the TA as valid as long as it is still running.

*Several companies would like that, even if the TAT is running, the network can request the UE to perform random access as SCG activation.*

- Futurewei thinks P2 is not complete. NW can also tell UE not to do RACH. LGE wonders about the wording. UE could always perform RACH in some cases. Huawei explains that this just means NW can tell UE to always perform RACH but this doesn't mean NW can tell UE to do RACH-less activation. UE may have to use RACH in other case.

- DOCOMO thinks RACH-less activation is not mandatory to support or configure.

* 2: If instructed by the network in the SCG activation indication, the UE performs random access towards the PSCell (even if the TAT is still running).

*With respect to handling of beams:*

*- no company expressed concerns about the possibility for the network to indicate TCI state in the SCG activation indication*

*- a large majority of companies think that, in order to allow RACH-less SCG activation, it is necessary that the UE performs BFD while the SCG is deactivated*

- Ericsson is fine with P3 but thinks we need to discuss P4 together. Otherwise we can't use P3. LGE agrees. Nokia thinks we discussed P3 already in Rel-16. Is fine with the first sentence but not clear what the second part "otherwise" means. Huawei explains that this clarifies how previously activated TCI states are used and network handles TCI states normally.

- ZTE wonders what NW ensures. This doesn't mean NW has to make sure the RACH-less activation is always successful.

* 3: The SCG activation indication can indicate the TCI state (with or without BWP switching) for PDCCH/PDSCH reception. Otherwise, the UE uses the previously activated TCI states and the network should ensure that the relevant TCI states are configured and activated for the UE to monitor PDCCH at RACH-less SCG activation.

- Apple is not OK with P4. Ericsson thinks that if we don't have these is that RRM measurements will not allow timely beam information. Periodic RRM measurements may help but carry lot of overhead. NEC can accept P4 but wonders if this is only for RACH-less activation? Can we disable RACH-less activation and allow NW to disable BFD and RLM? DCM and MTK have the same question as NEC. Huawei thinks that could be reasonable. We can discuss capabilities later on.

- QC thinks we aim to have lower activation delay. We can gain in power by disabling BFD/RLM but this is not according to WI. Since UE does RRM, BFD/RLM doesn't cost much. Apple wonders if UE can do BFD/RLM at the same time as RRM? Thinks there is also Xn delay and UE can just use the coarse beam and use beam refinement as per R15.

* 4: The UE performs RLM and BFD on PSCell while the SCG is deactivated if network configures it.

#### 8.2.2.2 UE measurements and reporting in deactivated SCG

Including discussion on how/whether RRM/RLM/BFD measurements are done for deactivated SCG

Including discussion on TAT timer handling for deactivated SCG

Including discussion on RRM/CSI/BM measurement reporting for deactivated SCG

Web Conf (Tuesday 1st week) (1)

[R2-2108389](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108389.zip) UE measurements and reporting in deactivated SCG Ericsson discussion LTE\_NR\_DC\_enh2-Core

*Proposal 1 TA timer of PSCell is kept running after SCG deactivation, if TA timer is running.*

*Proposal 2 UE does not need to perform any procedure, e.g. RACH, to maintain UL timing alignment with SN if TAT timer expires.*

*Proposal 3 Upon SCG activation, if TA timer of the PSCell has already expired or stop, UE performs RACH on the PSCell to obtain UL timing information.*

*Proposal 4 RAN2 confirms that when deactivated SCG PSCell is changed UE does not initiate RACH until there is need to activate SCG.*

*Proposal 5 RLM is performed for the deactivated SCG and legacy SCGFailureInformation message and reporting procedure can be reused after RLF is detected.*

*Proposal 6 BFD is performed for the deactivated SCG and SCGFailureInformation message and reporting procedure can be used when beam failure is detected.*

*Proposal 7 If the SCG is to be activated but BFD has been declared, random access is needed when the UE activates the PSCell.*

*Proposal 8 TA timer is not stopped due to BFD/RLM detection.*

*Proposal 9 The network can configure separate measurement configurations for activated and deactivated SCG, respectively, where the measurements for deactivated SCG may be a subset of the measurements for activated SCG.*

*Proposal 10 There should be at least one RRM configuration which enables the UE to maintain DL fine sync on the PSCell while the SCG is deactivated (e.g. including SFN timing and SSB selection).*

*Proposal 11 Maintaining DL fine sync on the deactivated SCG means that the UE is ready to transmit in next PRACH or SR occasion having processed the SCG activation command. FFS possible dependency on the measurement configuration.*

*Proposal 12 Assuming the UE performs BFD while the SCG is deactivated, it does not perform CSI measurement on PSCell and CSI reporting.*

*Proposal 13 In the SN Addition procedure during PSCell addition/change, the target SN should be able to set the SCG activation state in the response message to the MN.*

*Proposal 14 At PSCell addition/change, if the SCG activation target state is SCG activated, the UE performs random access in target PSCell (as in legacy).*

*Proposal 15 At PSCell addition/change, if the SCG activation target state is SCG deactivated, the UE does not perform random access in target PSCell.*

*Proposal 16 During handover preparation, source MN sends the current SCG activation state to the target MN. Whether the current SCG activation state is part of the inter-node container or in the XnAP part of the message needs also be discussed in RAN3.*

*Proposal 17 In the SN Addition procedure during handover preparation, the (target) SN should be able to set the SCG activation state in the response message to the target MN.*

*Proposal 18 At handover when SCG target state is set to deactivated, the UE does not perform a random access in the target PSCell. This applies also for the handover cases where reconfigurationWithSync for the SCG is required per legacy (e.g. at AS security key change).*

[R2-2107423](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107423.zip) UE measurements and reporting in deactivated SCG Qualcomm Incorporated discussion Rel-17 [R2-2103893](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2103893.zip)

*Observation 1. Performing RLM and BFD on PSCell while in SCG deactivated can enable UE to determine upon SCG activation if it has a usable beam for performing RACH or SR, which has the potential to reduce SCG activation delay.*

*Observation 2. In SCG deactivated, UE performing RLM and BFD on the PSCell does not result in significant additional power consumption if RRM measurements on the PSCell are already being performed.*

*Observation 3. Upon receiving SCGFailureInformation, in case MN decides to release the SN or change the PSCell, MN transmits RRC reconfiguration to the UE, and if PSCell is changed, the included SN RRC reconfiguration also indicates whether the activation state of new SCG is deactivated or activated.*

*Observation 4. In order to assist the SN to determine the configuration of updated beams and RSs as in Proposal 6, UE should report PSCell beam measurement results in SCGFailureInformation.*

*Observation 5. Upon UE detecting BFD or RLM, the option in which UE reports measurements via the MCG and waits for reconfiguration (Proposals 3-8 above) seems more preferable than the option where UE waits for SCG activation and performs RACH on activation, since it is possible and more likely in the former option for UE to have a usable beam upon SCG activation.*

*Observation 6. In general, TA is considered valid when the TA timer is running, and this holds for the TA timer of the PSCell while UE is in SCG deactivated.*

*Observation 7. Transmission of CSI reports on PSCell UL impacts power savings and if TA timer of the PSCell expires, requires UE to maintain UL timing with SN while in SCG deactivated.*

*Observation 8. CSI-RS measurements and reporting after SCG activation do not contribute significantly to the delay for SN to begin scheduling the UE on the DL.*

*Observation 9. DL and UL beam management procedures involve periodic beam (L1) measurement reports on the UL or SRS transmissions, which could result in increased UE power consumption in SCG deactivated.*

*RLM, BFD, and radio link failure recovery in SCG deactivated*

*Proposal 1. UE supports performing RLM on PSCell while in SCG deactivated.*

*Proposal 2. UE supports performing BFD on PSCell while in SCG deactivated.*

*Proposal 3. UE transmits RRC SCGFailureInformation message to MN upon detecting RLF on PSCell while in SCG deactivated.*

*Proposal 4. Upon detecting BFD on the PSCell while in SCG deactivated, UE reports the occurrence of BFD to the network via the MCG.*

*Proposal 5. Upon detecting BFD on the PSCell in SCG deactivated UE reports BFD by transmitting SCGFailureInformation to the MN (a new failure type can be introduced in the message for this purpose).*

*Proposal 6. Upon receiving SCGFailureInformation, in case MN decides not to change the PSCell, MN and SN may optionally provide a reconfiguration to the UE in response. In particular, SN may provide in an RRC reconfiguration an updated set of beams, RLM RSs, BFD RSs, additional RSs, and TCI states for UE to measure on the PSCell while in SCG deactivated.*

*Proposal 7. UE should be configured to report PSCell beam measurement results in SCGFailureInformation while in SCG deactivated.*

*Proposal 8. Upon receiving the RRC reconfiguration message as discussed in Proposal 6, UE resumes performing RLM and BFD on the PSCell as per the provided configuration, while in SCG deactivated.*

*Handling Time Alignment timer (TAT) of the PSCell in SCG deactivated*

*Proposal 9. Upon UE entering SCG deactivated, if the TA timer of the PSCell is running, UE should keep the timer running.*

*Proposal 10. While in SCG deactivated, UE should not stop the TA timer of the PSCell if it is running when BFD or RLM is detected.*

*Proposal 11. While in SCG deactivated, if TA timer of the PSCell expires, UE does not perform any procedure, e.g., RACH on PSCell, to regain or maintain UL timing alignment with the SN.*

*Proposal 12. Upon SCG activation, if TA timer of the PSCell has already expired, UE performs RACH on the PSCell to obtain UL timing information.*

*CSI-RS measurements and reporting in SCG deactivated*

*Proposal 13. In SCG deactivated, UE does not perform CSI-RS measurements on the PSCell and CSI reporting based on these measurements.*

*Beam management in SCG deactivated*

*Proposal 14. In SCG deactivated, UE does not support DL or UL beam management procedures.*

[R2-2107746](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107746.zip) Discussion on UE behaivour when SCG is deactivated ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Observation 1: To support RACH-less SCG activation, at least TA should be valid, and network knows the best DL beams so that UE can be successfully scheduled.*

*Observation 2: In general, mobility based measurements (for both PSCell and SCG SCell) need to be performed when SCG is deactivated. Other measurements can be stopped for power saving.*

*Proposal 1: UE keeps TA timer running when entering SCG deactivation.*

*Proposal 2: UE performs BFD and RLM when enters SCG deactivation. UE stops BFD and RLM when TA timer expires, and UE stops TA timer when BFD failure or RLF is declared.*

*Proposal 3: When RLF is declared while SCG is deactivated, UE transmits SCGFailureInformation to SN via MCG (follow legacy behaviour).*

*Proposal 4: When BFD failure is declared while SCG is deactivated, UE sends indication to SN via MCG (FFS on which message is used).*

*Proposal 5: For RACH-less SCG activation, network provides UL grants (associated with DL beams) and a RSRP threshold in SCG activation. If RSRP of a SSB is above the threshold, UE uses corresponding UL grant to transmit data; otherwise (no SSB fulfill the threshold), RACH is performed.*

*Proposal 6: Optimization of SN configured RRM measurement is needed if RAN2 agrees to use lower layer signaling for SCG (de)activation.*

*Proposal 7: RAN2 understand UE maintains DL sync based on the RRM measurements of PSCell. The measurement period of PSCell measurement during SCG deactivation state is up to RAN4.*

[R2-2107603](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107603.zip) TA Maintenance and other RRM UE actions in SCG deactivated state Apple discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Observation 1: As has been used for UE mobility, the RRM measurements (with proper configuration of time-domain averaging as well as triggering thresholds) can provide a fairly reasonable estimate of whether the UE have moved towards or away from the base-station enough that the stored TA might not be valid anymore.*

*Observation 2: In SDT work-item, UL TA is considered to be valid based on the measured RS quality (the RSRP change < threshold), along with the SDT TA-Timer, and same logic/scenario is applicable here.*

*Observation 3: In small cell deployments where the SCG is typically the booster small cell, the location of the UE with respect to the small cell does not impact the TA very much due to the small cell size. In such cases, there is no need to link RRM with TA, and the UE can be configured to just re-use the TA when it moves out of SCG deactivated state.*

*Observation 4: With no PDCCH monitoring, RLM on the PSCell is not critical in SCG deactivated state.*

*Observation 5: With the ability of RRM to configure the UE to report beam RSRP measurements, additional beam management/recovery is not critical for the UE in SCG deactivated state.*

*Observation 6: The delay of SCG re-activation from the overall system perspective (if we consider the SN-MN interaction needed before the re-activation command is sent to the UE) is already pretty high, and the latency added from not performing RLM/BM/BFD is not the chief contributor to the SCG re-activation latency.*

*Observation 7: The UE is expected to perform RRM while in SCG deactivated state. We can use this aspect to help speed up re-activation.*

*Observation 8: The primary purpose of the RRM by the UE in deactivated SCG state is to let the NW know about the signal conditions of at least the PSCell (which can be used for mobility and other aspects by the NW). UE measurement of SCells in SCG is absolutely necessary and the UE can benefit in power savings if the SCell RRM is relaxed.*

*Observation 9: The UE’s SCG RRM measurements during SCG deactivated state should be designed to also make the operation power efficient compared to the RRM activities the UE perform during SCG active state.*

*Proposal 1: If the UE has a valid TA during SCG deactivation, in the SCG deactivated state, the RRM measurements of the PSCell are used to determine if the UE’s stored TA is valid or not. The NW can configure the UE with the averaging/filtering parameters as well as the thresholds/bias that are used by the UE to determine the TA validity. FFS if the new parameters are needed or existing ones can be re-used.*

*Proposal 2: The NW has the option to configure the UE to consider that the TA is always valid during SCG deactivation.*

*Proposal 3: RLM/BFD/BM is not needed in SCG deactivated state. Beam measurements and reporting using RRM is sufficient.*

*Proposal 4: NW can optionally provide a separate RRM configuration to the UE to be used in SCG deactivated state. FFS if a separate explicit configuration is needed or if the UE can assume this implicitly. Proposal : RAN2 to discuss the below options for RRM activities in SCG deactivated state:*

*- Reuse of SCG C-DRX while in SCG activated state with relaxed SCG measurements, which are defined by RAN4.*

*- RRM measurements in SCG deactivated state based on a MeasCyclePSCell (similar to the SCell measurement).*

*- Further relaxed SCell measurement (for eg., N x MeasCycleScell)*

*- Normal NCell meas for MN, while skipping RRM on NCells configured by SCG.*

[R2-2107020](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107020.zip) UE measurements and reporting in SCG deactivation OPPO discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107328](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107328.zip) UE behavior in deactivated SCG NTT DOCOMO INC. discussion Rel-17

[R2-2107753](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107753.zip) Mobility for deactivated SCG NTT DOCOMO INC. discussion Rel-17 [R2-2105064](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105064.zip)

[R2-2107923](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107923.zip) UE behavior when SCG is deactivated Lenovo, Motorola Mobility discussion Rel-17

[R2-2108132](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108132.zip) Further considerations on SCG deactivation NEC discussion Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2105791](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105791.zip)

[R2-2108166](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108166.zip) Discussion on UE behavior in deactivated SCG China Telecommunications discussion Rel-17

[R2-2108446](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108446.zip) UE behaviour while the SCG is deactivated Huawei, HiSilicon discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108489](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108489.zip) Measurements and maintenance of UL synch with a deactivated SCG InterDigital discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108649](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108649.zip) Discussion for UE behaviour in deactivated SCG SHARP Corporation discussion Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2106287](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106287.zip)

[R2-2108669](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108669.zip) UE behavior when SCG is deactivated vivo discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108692](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108692.zip) UE Behavior in Deactivated SCG CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2105059](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105059.zip)

[R2-2108721](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108721.zip) UE Measurements in SCG Deactivation LG Electronics discussion Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2106107](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106107.zip)

[R2-2108733](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108733.zip) UE behavior during SCG deactivation MediaTek Inc. discussion Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2106336](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106336.zip)

#### 8.2.2.3 Activation of deactivated SCG

Including outcome of [Post114-e][231][R17 DCCA] SCG activation/deactivation options (Huawei)

Including discussion on SCG activation details: For network-initiated activation, when is random access used ? Is usage of random access UE or network decision?

How can UE request SCG activation?

Web Conf (Tuesday 1st week) (1)

UP details: PHR handling when SCG is deactivated

[R2-2107668](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107668.zip) PHR issues for SCG activation Samsung discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 1. PSCell is in deactivated state for deactivated SCG.*

*Proposal 2. For deactivated PSCell, PHR is not reported.*

*Proposal 3. PHR is triggered upon activation of the PSCell.*

Web Conf (Tuesday 1st week) (2)

How can UE request SCG activation?

[R2-2108668](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108668.zip) Discussion on activation of a deactivated SCG vivo discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 1 MAC CE based SCG activation can be supported.*

*Proposal 2 For MN-triggered SCG activation, if SN accepts the SCG activation, SN can indicate to the MN whether the included SN RRC container (e.g., dedicated RACH resource) needs to be sent to the UE simultaneously when activating the SCG.*

*Proposal 3 SN can indicate to the MN whether the MN is allowed to directly activate the SCG without SN involvement for a period of time.*

*Proposal 4 For SN-triggered SCG activation, when SN requests SCG activation, SN can indicate to the MN whether the included SN RRC container (e.g., dedicated RACH resource) needs to be sent to the UE simultaneously when activating the SCG).*

*Proposal 5 When the SCG activation is indicated to the UE via the MCG, the UE is allowed to skip RACH if the TAT is still running and reconfigurationwithsync is not provided by the SN.*

*Proposal 6 asks RAN4 to define SCG/PSCell activation delay for deactivated SCG in case RACH is not performed upon SCG/PSCell activation.*

*Proposal 7 The first active BWP of PSCell is activated upon SCG activation.*

*Proposal 8 Upon SCG activation, the UE shall keep the SCG SCell in deactivated except for the SCell state is reconfigured by the network in the SCG activation command.*

*Proposal 9 Upon SCG activation, the PHR can be triggered.*

*Proposal 10 For at least SN terminated SCG bearer, SN can decide accept or reject the SCG activation request received via SCG without MN involvement.*

*Proposal 11 When SCG is deactivated, the below options should be supported for UE-triggered SCG activation:*

*- Opt1: for split bearer, the primary path is set to MCG automatically, the UE sends BSR/UL data on the MCG leg and the network decides to trigger SCG activation if needed;*

*- Opt2: if UL data arrives at SCG bearers, the UE can send SCG activation request to the MCG;*

*- Opt3: if UL data arrives at SCG bearers, the UE can initiate RACH/SR towards the SCG.*

*Proposal 12 UE-trigger SCG activation for fast MCG recovery can be supported.*

*Proposal 13 Network should be allowed to accept or reject the SCG activation requested by the UE.*

*Proposal 14 If the UE sends SCG activation request to the MCG, the final decision is sent to the UE via MCG.*

*Proposal 15 If the UE triggers RACH or SR towards SCG for SCG activation, the final decision is sent to the UE via SCG.*

*Proposal 16 UE starts monitoring the PDCCH on the SCG upon initiation of RACH or SR for requesting SCG activation.*

[R2-2107420](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107420.zip) Activation of deactivated SCG Qualcomm Incorporated discussion Rel-17

*Observation 1. In Proposal 3, UE may send an SR on the PSCell if the following conditions hold:*

*- The TA timer associated with the PSCell has not expired.*

*- UE has a usable beam for transmission of the SR.*

*Observation 2. Even if SN seeks MN confirmation for SCG activation before allocating grant to transmit MCGFailureInformation message, the resulting procedure would be faster than RRC re-establishment, which would have to be performed otherwise upon MCG RLF.*

*Observation 3. In the option where UE triggers SCG activation by initiating RACH or sending SR on PSCell:*

*- As discussed above, more failure handling is required compared to the option where an RRC message is transmitted via MCG to the MN, i.e., failure handling procedures are required if RACH or SR procedure fails.*

*- Network needs to configure UE as discussed in Proposal 7.*

*Observation 4. Since UE keeps track of whether the TA timer of PSCell has expired and whether it has a usable beam, it should be decided by the UE whether to perform RACH at SCG activation.*

*Proposal 1. UE may initiate a request for SCG activation while in SCG deactivated in the following cases:*

*1) If for a DRB that uses SCG resources only, i.e., an SCG DRB, there is UL data arrival.*

*2) UE detects MCG RLF.*

*Proposal 2. While in SCG deactivated, in case of a split bearer with UL data, MN may trigger SCG activation based on received BSR from the UE.*

*Proposal 3. If UE detects MCG RLF while in SCG deactivated, UE triggers SCG activation either by initiating RACH or by sending an SR on the PSCell.*

*Proposal 4. Upon receiving the RACH preamble or the SR from the UE, SN provides an UL grant to the UE.*

*Proposal 5. UE uses the provided UL grant to initiate the R16 MCG Failure Information procedure by transmitting the MCGFailureInformation message to the SN.*

*Proposal 6. If there is UL data arrival on an SCG DRB while UE is in deactivated, UE triggers SCG activation by one of the following options:*

*1) Initiating RACH or by sending an SR on the PSCell.*

*2) Transmitting an SCG activation request in an RRC message via MCG to the MN. FFS whether UE Assistance Information can be used for this purpose.*

*Proposal 7. In Proposal 6, for the option of using RACH or SR procedure on PSCell, network needs to configure UE to use this option. Network also needs to configure UE with PUCCH and/or CFRA resources, if available, for lower SCG activation delay.*

*Proposal 8. If there is UL data arrival on an SCG DRB while UE is in SCG deactivated, we prefer the option where UE triggers SCG activation by transmitting an SCG activation request in an RRC message via MCG to the MN. FFS whether UE Assistance Information can be used for this purpose.*

*Proposal 9. UE decides whether to perform RACH at SCG activation.*

*Proposal 10. Upon SCG activation, UE does not need to RACH on PSCell if all of the following conditions are satisfied:*

*- TA timer of PSCell is running.*

*- UE has a usable beam on PSCell.*

*- SCG activation message does not include a reconfigurationWithSync.*

*Proposal 11. MAC CE based SCG activation by the network should be supported when no UE configuration changes need to be provided during activation.*

* [Post115-e][219][R17 DCCA] UE-initiated SCG activation (Huawei)

 Scope: Discuss the detauils of UE-initiated SCG activation and whether we need it. Shuld clarify technical aspects.

 Intended outcome: report

 Deadline: Long

[R2-2107019](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107019.zip) Open issues for activation of deactivated SCG OPPO discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107353](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107353.zip) Discussion on UE behaviour when SCG is deactivated Spreadtrum Communications discussion Rel-17

[R2-2107532](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107532.zip) Discussion on random access and UE initiation for SCG fast activation Futurewei discussion Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2105010](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105010.zip)

[R2-2107602](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107602.zip) Remaining aspects related to RACH-less SCG activation Apple discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107604](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107604.zip) UE initiation of SCG (de)activation request Apple discussion Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2105140](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105140.zip)

[R2-2107747](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107747.zip) Consideration on UE triggered SCG activation ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107874](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107874.zip) UL data handling in deactivated SCG DENSO CORPORATION discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107924](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107924.zip) Discussion on SCG activation Lenovo, Motorola Mobility discussion Rel-17

[R2-2108133](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108133.zip) Further discussions on SCG activation NEC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108134](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108134.zip) UE request for SCG activation NEC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108447](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108447.zip) Lower layer signalling for SCG (de)activation Huawei, HiSilicon discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108490](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108490.zip) Activation of SCG InterDigital discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108531](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108531.zip) Discussions on activation of deactivated SCG CMCC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108693](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108693.zip) Considerations on Activation of Deactivated SCG CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108722](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108722.zip) Activation of SCG LG Electronics discussion Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2106108](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106108.zip)

[R2-2108728](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108728.zip) Discussion on SCG activation SHARP Corporation discussion Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2106312](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106312.zip)

*Withdrawn:*

[R2-2107865](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107865.zip) UL data handling in deactivated SCG DENSO CORPORATION discussion Rel-17 LTE\_NR\_DC\_enh2-Core Withdrawn

#### 8.2.2.4 Other aspects of SCG activation/deactivation

This agenda item will not be treated in this meeting .

[R2-2107605](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107605.zip) SCG bearer handling for the SCG deactivation feature Apple discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108532](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108532.zip) Considerations for fast MCG link recovery with deactivated SCG CMCC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

### 8.2.3 Conditional PSCell change / addition

No documents should be submitted to 8.2.3. Please submit to.8.2.3.x

#### 8.2.3.1 CPAC procedures from network perspective

Including discussion on CPAC configuration and execution details and Stage-2 signalling flows.

Including discussion on the design of inter-node messages (to answer RAN3 LS questions).

Including discussion on whether, after T-SN provided the conditional configurations to the MN, the SN measurement configuration can be updated \*before\* the MN provides theses conditional configurations to the UE.

Including discussion whether the execution conditions can be updated after T-SN provided the conditional configurations to the MN.

Web Conf (Tuesday 1st week) (1)

Discussion on the design of inter-node messages (to answer RAN3 LS questions).

Discussion on whether, after T-SN provided the conditional configurations to the MN, the SN measurement configuration can be updated \*before\* the MN provides theses conditional configurations to the UE.

[R2-2108112](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108112.zip) Network procedures and signalling for CPAC Ericsson discussion Rel-17 LTE\_NR\_DC\_enh2-Core

Discussion

- Nokia thinks solution 2 is cleaner and avoids these problems with solution 1 (i.e. ignoring measIds tec.). But would be fine to combine solutions via having SN inform MN under which conditions update will result. LGE agrees with solution 2. Qualcomm agrees and thinks solution 2 is cleaner. Would be also fine with Nokia P3 as it could avoid later MN-SN interactions. Apple and Futurewei agree.

- Ericsson thinks we should decide now and is not sure Nokia solution is needed.

- CATT thinks that solution 1 will have some impact on RAN3 and needs an LS. Thinks we should adopt solution 1 if RAN3 can handle it. Samsung thinks solution 1 is better because there's no real problems. Network can do additional reconfiguration later on. Lenovo thinks network could wait based on implementation anyway. Thinks RAN3 is discussing CPC replace but not sure what to ask from RAN3.

- Huawei thinks that for solution 1, we need to define whether UE can ignore measIds and that doesn't need LS to RAN3. For solution 2, it's not clear if there is nested procedure for "re-negotiation" which requires RAN3. Normally MN can re-negotiate if SN modifies. How does it wokr if something fails? Nokia clarifies that source SN will determine what to do: MN will not change source SN configuration and MN will know this. Huawei wonders if we change gaps, doesn't it require MN-SN coordination? Would be fine if re-negotiation is not allowed as that would reduce complexity. QC is not sure why source SN would ever reject the modification since this is about informing what happened?

- Huawei is worried solution 2 opens up too many unknowns. CATT agrees and thinks solution 1 is simpler from RAN3 perspective.

* Working assumption: We go for solution 2. Should make sure multiple re-negotiation procedures (i.e. two nested procedures or anything that requires negotiation cannot be used) is not allowed. Inform RAN3 and take their feedback into account.

*Proposal 1 If solution 1 is agreed, send an LS to RAN3 and ask them to discuss the scenarios where not all candidate target cells are accepted by T-SN in option 1.*

*Proposal 2 If solution 1 is agreed, the specification is updated so that the UE does not have to perform measurements for measId(s) in MeasConfig that are not indicated in the condExecutionCond associated to condReconfigId.*

*Proposal 3 The S-SN only sends the execution conditions to the MN after it has received information about which target cells that were accepted by T-SN.*

Discussion (P4-10)

- Huawei thinks these are mainly RAN2 details and RAN3 doens't care so much. Not sure ASN.1 given by Ericsson works in all cases. Some extensions are inside the list, and recursive message inside may be difficult to use with empty SEQUENCE. Convida agrees that empty SEQUENCE has to be at the end of encoding.

* 6 The inter-node signalling from (at least) target SN to MN for CPAC procedures only includes a single container (FFS which IE), even if several PSCell candidates are provided.
* 10 A response LS should be sent to RAN3 to inform about the RAN2 decisions on inter-node RRC container design for CPAC. Offline [221] (Ericsson), deadline Thu morning, try to agree via email.
* Post-meeting email discussion inter-node message details, with aim to provide draft CR (Ericsson)
* [Post115-e][216][R17 DCCA] Inter-node message design (Ericsson)

Scope: Discuss details of inter-node messages for CPAC and provide draft CR of the resulting option(s).

 Intended outcome: Draft CR

 Deadline: Long

*Proposal 4 Multiple PSCell candidates (and thus multiple CG-Config) should be included in a single RRC container in the S-NODE ADDITION REQUEST ACKNOWLEDGE message from target SN to MN at CPAC procedures.*

*Proposal 5 The existing CG-Config message is extended to include a list of the additional CG-Config(s) in order for the T-SN to provide the list of CG-Config (one per candidate PSCell) to the MN at CPAC procedures.*

*Proposal 6 The inter-node signalling from source SN to MN at CPAC procedures only includes a single CG-Config, even if several PSCell candidates are provided.*

*Proposal 7 Discuss whether the execution conditions are included in a new list or in an extension of the candidateCellInfoListSN (within MeasResultNR).*

*Proposal 8 The inter-node signalling from MN to candidate target SN at CPAC procedures only includes a single CG-ConfigInfo, even if several PSCell candidates are provided.*

*Proposal 9 RAN2 to inform RAN3 that the MN is not required to forward the execution condition(s) to the target SN (also in the SN initiated inter-SN CPC procedure) and that the MN performs the association between the execution conditions (from the source SN) and the RRC configuration of the candidate PSCell(s).*

*Proposal 10 A response LS should be sent to RAN3 to inform about the RAN2 decisions on inter-node RRC container design for CPAC and handling of execution conditions at SN initiated inter-SN CPC procedure. A draft LS is provided in the Annex.*

[R2-2108448](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108448.zip) Source SN configuration update during CPC configuration Huawei, HiSilicon discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108449](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108449.zip) Reply LS on inter-node message design Huawei, HiSilicon LS out Rel-17 LTE\_NR\_DC\_enh2-Core To:RAN3

[R2-2107226](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107226.zip) Discussion on SN initiated conditional PSCell change NTT DOCOMO INC. discussion

[R2-2107525](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107525.zip) On SN-initiated CPC and the working assumptions Nokia, Nokia Shanghai Bell discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 3: S-SN informs the MN in SN Change Required the acceptance/rejection of which cells requires an update of S-SN measurement configuration.*

[R2-2107421](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107421.zip) CPAC procedures from network perspective Qualcomm Incorporated discussion Rel-17

[R2-2108135](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108135.zip) Signaling details of SN-initiated CPC NEC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108162](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108162.zip) Discussion on SN initiated inter-SN CPC ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108163](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108163.zip) Further consideration on CPAC procedure ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107111](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107111.zip) Considerations on SN-initiated CPC procedure KDDI Corporation discussion

[R2-2107460](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107460.zip) Discussion on SN initiated inter-SN CPC China Telecommunication discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107404](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107404.zip) Discussion on CPAC procedures from NW perspective vivo discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107533](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107533.zip) Remaining issues with SN initiated CPC Futurewei discussion Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2105012](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105012.zip)

[R2-2107925](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107925.zip) Issues related to SN initiated inter-SN CPC Lenovo, Motorola Mobility discussion Rel-17

[R2-2108694](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108694.zip) Discussion on CPAC procedures from network perspective CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108775](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108775.zip) Further consideration on CPAC stage 2 flow, and remaining issues Samsung Electronics discussion LTE\_NR\_DC\_enh2-Core

Email discussions ([221])

* [AT115-e][221][R17 DCCA] LS to RAN3 on CPAC (Ericsson)

Scope:

* + - Inform RAN3 about the RAN2 decisions on inter-node RRC container design for CPAC

 Intended outcome:

* + - Draft LS out in [R2-2108863](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108863.zip).

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 2nd week Thu, UTC 0900

By Email (outcome of [221])

[R2-2108863](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108863.zip) [Draft] Reply LS on inter-node message design for CPAC busy indication Ericsson LS out Rel-17 LTE\_NR\_DC\_enh2-Core To: RAN3

* [221] Remove “RAN2 has also concluded that, to prepare multiple PSCell candidates by the same candidate target SN, the source SN sends a single RRC inter-node message to the MN and the MN sends a single RRC inter-node message to the candidate target SN”
* [221] Add “FFS if T-SN is informed on the execution conditions” to Q2 answer
* [221] Add "Finally, RAN2 would also notes that the exact Stage-3 details of these decisions are still FFS." to the end of the LS
* [221] Remove “[Draft]” from name and use “RAN2” as source
* [221] With the above changes, the LS can be approved.
* Revised in [R2-2109215](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2109215.zip)

[R2-2109215](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2109215.zip) Reply LS on inter-node message design for CPAC busy indication RAN2 LS out Rel-17 LTE\_NR\_DC\_enh2-Core To: RAN3

* [221] Approved

#### 8.2.3.2 CPAC procedures from UE perspective

Including discussion on UE measurements for CPAC purposes.

Including discussion on signalling towards UE.

Including outcome of [Post114-e][233][R17 DCCA] Uu Message design for CPAC (CATT)

Web Conf (Tuesday 2nd week) (1)

Including outcome of [Post114-e][233][R17 DCCA] Uu Message design for CPAC (CATT)

[R2-2108695](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108695.zip) Summary of [Post114-e][233][eDCCA] Uu Message design for CPAC(CATT) CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

* Revised in [R2-2109091](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2109091.zip)

[R2-2109091](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2109091.zip) Summary of [Post114-e][233][eDCCA] Uu Message design for CPAC(CATT) CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

Bulk agreement

* 1: [18/18] Reuse the conditionalReconfiguration field to configure CPAC (all scenarios) in Rel-17.
* 2a: [18/18] For NR-DC, reuse the condRRCReconfig field to contain both MCG and SCG re-configurations for each candidate PSCell configuration. I.e. the RRC message contained in the condRRCReconfig is in MN format, in which the RRC message generated by the candidate SN is encapsulated in a RRC container (e.g. mrdc-SecondaryCellGroup).
* 2b: [18/18] For (NG)EN-DC, reuse the condReconfigurationToApply field for (NG)EN-DC to contain both MCG and SCG re-configurations for each candidate PSCell configuration. I.e. the RRC message contained in the condReconfigurationToApply is in MN format, in which the RRC message generated by the candidate SN is encapsulated in a RRC container (e.g. nr-SecondaryCellGroupConfig).
* 3: [18/18] For CPA and MN-initiated CPC, the execution conditions are configured in condExecutionCond for NR-DC, or triggerCondition for (NG)EN-DC and refer to an MCG MeasConfig.
* 5: [18/18] For CPA and inter-SN CPC, condReconfigId/CondReconfigurationId of the selected target PSCell is included in the RRC Reconfigutation Complete message to the MN.
* 6: [18/18] The existing EUTRA signalling in ReportConfigInterRAT is to be modified to support B1 events for CPA and MN initiated CPC in (NG)EN-DC .
* 7: [18/18] The existing NR signalling in ReportConfigNR is to be modified to support A4 events for CPA and MN initiated CPC in NR-DC.
* 12a: [18/18] A new field (e.g. condExecutionCondSN) in CondReconfigToAddMod is introduced for NR-DC to indicate that the execution condition refers to the SCG MeasConfig .
* 12b: [18/18] A new field (e.g. triggerConditionSN) in CondReconfigurationAddMod for (NG)EN-DC is introduced to indicate that the execution condition refers to the SCG MeasConfig .

- Nokia thinks P10 is unclear what successfull CPC execution means: When CPC starts or when RA succeeds? CATT thinks it's when RA succeefs. Nokia wonders if complete-message is sent before this? CATT clarifies there are two complete-message, and the second one is sent after RA completion.

- LGE would like to discuss P10 more. Thinks we don't need to delete as UE may experience RLF and this maintaining configuration can speed up recovery. CATT explains that this would be "CPC recovery" similar to CHO recovery but this is different discussion.

* 4: [16/18] For CPA and inter-SN CPC, upon execution of CPAC, the UE includes the selected target PSCell information in the RRC Reconfiguration Complete message to the MN.
* 11: [14/18] The MN does not need to comprehend the execution condition set by the source SN. The MN can associate the execution condition configuration to an RRCReconfiguration message provided by the target –SN without comprehending the execution condition set by the source SN.
* 10: [15/18] The UE shall delete CPC related measConfig upon successful CPC execution (i.e. after RA completes and UE has sent RRC Reconfiguration Complete to MN).

Discussion

P8

- Ericsson is not sure what this means: Should this be PSCell-based events? CATT explains this came from earlier CHO agreements. Should discuss what this means now that we support B1 as well. Can we have inter-RAT A3/A5-type of events?

- Huawei wonders if this is for EN-DC, NR-DC or both? CATT clarifies for both, but mainly applies for EN-DC.

- Positive: Futurewei thinks A3/A5 are most important events for mobility so would like to use them for CPC as well. They relate to serving cell quality, which is usually used for mobility events. Nokia agrees and thinks we should just discuss Stage-3 details. Ericsson agrees and thinks MN-initiated events do not make sense otherwise based on radio conditions. Qualcomm thinks target PSCell should be compared with source PSCell so this is needed. ZTE is fine but wonders if we introduce this to legacy PSCell change initiated by MN as well?

- Negative: CATT thinks B1 can also work and target cell can change PSCell afterwards. MTK thinks we don't have this for non-CPC case so why would we need it now? this this is an optimization. NEC, Lenovo and Huawei agrees. Samsung thinks for load balancing we don't use A3/A5 and this is similar to that.

- LGE thinks we don't need this in legacy so the previous agreement was not really applicable but could discuss further. Apple wonders if A3/A5 is introduced, would it be limited to SN-initiated CPC? Would prefer to follow legacy but is open for discussion.

- Ericsson thinks that in legacy case MN can get measurements from SN but here it's not possible. Nokia agrees.

- Huawei wonders if we can understand the complexity by Friday?

* Post-meeting email discussion (Ericsson): Attempt to create CRs based on A3/A5 to see the complexity. Can discuss also the gains from this.
* [Post115-e][217][R17 DCCA] Support of A3/A5 for inter-SN CPC (Ericsson)

 Scope: Draft CRs that show how the support of A3/A5 events would be done for inter-SN CPC to assess the complexity of the feature. Can also discuss the gains from the functionality.

 Intended outcome: report + draft CRs

 Deadline: Long

*[To discuss]*

*Proposal 8: RAN2 to discuss whether A3/A5 like events are applicable for MN initiated inter-SN CPC.*

- Ericsson thinks this only relates only to option 1.

Web Conf (2nd week Friday) (1)

*Proposal 9: [12/18] RAN2 is requested to specify that the UE ignores measId(s) that were not indicated in the condExecutionCond/triggerCondition.*

* Since Solution 2 adopted as working assumption, P9 is postponed (not needed with solution 2?)

[R2-2108689](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108689.zip) TS 38.331 CR for CPA and inter-SN CPC CATT draftCR Rel-17 38.331 16.5.0 B LTE\_NR\_DC\_enh2-Core Late

[R2-2108690](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108690.zip) TS 36.331 CR for CPA and inter-SN CPC CATT draftCR Rel-17 36.331 16.5.0 B LTE\_NR\_DC\_enh2-Core Late

[R2-2108113](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108113.zip) UE procedures and signalling for CPAC Ericsson discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107405](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107405.zip) Discussion on CPAC procedures from UE perspective vivo discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107594](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107594.zip) Discussion on CPAC open issues Apple discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108723](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108723.zip) Enhancements for CPAC LG Electronics discussion Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2103571](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2103571.zip)

#### 8.2.3.3 Other CPAC aspects

This agenda item will be deprioritized in this meeting.

Including discussion on CPAC failure handling.

Including discussion on CPAC co-existence with CHO.

[R2-2107524](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107524.zip) On CPAC Procedures and Further Functionalities Nokia, Nokia Shanghai Bell discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107871](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107871.zip) Failure handling of Conditional PSCell Addition DENSO CORPORATION discussion Rel-17 LTE\_NR\_DC\_enh2-Core [R2-2105444](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105444.zip)

[R2-2107926](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107926.zip) Miscellaneous issues on CPAC Lenovo, Motorola Mobility discussion Rel-17

[R2-2108491](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108491.zip) Coexistence of CHO and CPC InterDigital, Nokia, Nokia Shanghai Bell,ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108533](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108533.zip) Combination of CPAC and CHO CMCC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

### 8.2.4 Temporary RS for SCell activation

This agenda item will be deprioritized in this meeting unless urgent LS from RAN1 or RAN4 is received.

[R2-2107984](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107984.zip) MAC CE for scell activation and temporary RS Nokia, Nokia Shanghai Bell discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2108450](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108450.zip) On RAN4 LS on Temporary RS for SCell activation Huawei, HiSilicon discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2107021](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107021.zip) Discussion on TRS activation for fast SCell activation OPPO discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*(moved from 8.2.2.2)*

* Topic handled in post-meeting email discussion (unless urgent LS from RAN1/4 is received)
* [Post115-e][218][R17 DCCA] TRS-based SCell activation (OPPO)

Scope: Discuss RAN2 impacts of TRS-based SCell activation and attempt to draft initial CRs to RRC/MAC to understand the scope.

 Intended outcome: Report + draft CR to MAC/RRC

 Deadline: Long

## 8.3 Multi SIM

(LTE\_NR\_MUSIM-Core; leading WG: RAN2; REL-17; WID: RP-210316)

Time budget: 1 TU

Tdoc Limitation: 4 tdocs

Email max expectation: 3-4 threads

### 8.3.1 Organizational, Requirements and Scope

Including LSs and any rapporteur input.

Web Conf (Monday 1st week) (2)

[R2-2106935](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106935.zip) Reply LS on NAS-based busy indication (R3-212877; contact: ZTE) RAN3 LS in Rel-17 LTE\_NR\_MUSIM-Core To:RAN2, SA2, CT1 Cc:SA3

* Noted (discussed jointly with the SA2 reply)

[R2-2106970](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106970.zip) Reply LS on NAS-based busy indication (S2-2105150; contact: Intel) SA2 LS in Rel-17 LTE\_NR\_MUSIM-Core To:RAN2, CT1, RAN3 Cc:SA3

- LGE wonders how the NAS paging rejection is sent in INACTIVE? Is this sufficient? Intel thinks SA2 agreed to that.

- QC thinks the last part is independent of busy indication. Intel agrees.

- Nokia wonders if NAS-level busy indication means UE has to be CONNECTED?

* Noted (discussed jointly with the RAN3 reply)
* Will attempt to reply from this meeting, reply discussed together with contributions in 8.3.3

[R2-2107300](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107300.zip) [Draft] Reply LS on NAS-based busy indication Intel Corporation LS out Rel-17 LTE\_NR\_MUSIM-Core To:SA2 Cc:SA3, RAN2, CT1, RAN3

* Discussed together with contributions in 8.3.3

Web Conf (2nd week Friday) (4)

Post-meeting email discussions (running CRs)

* [Post115-e][231][MUSIM] Running NR RRC CR for MUSIM (vivo)

Scope: Create running NR RRC CR for MUSIM

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][232][MUSIM] Running LTE RRC CR for MUSIM (Samsung)

Scope: Create running LTE RRC CR for MUSIM

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][233][MUSIM] Running 36.304 /38.304 CRs for MUSIM (China Telecom)

Scope: Create running 36.304 and 38.304 CRs for MUSIM

 Intended outcome: Running CRs

 Deadline: Long

* [Post115-e][234][MUSIM] Running Stage-2 CRs for MUSIM (Ericsson)

Scope: Create running Stage-2 CRs (36.300, 38.300 and/or 37.340) for MUSIM

 Intended outcome: Running CR

 Deadline: Long

### 8.3.2 Paging collision avoidance

This agenda item may be deprioritized in this meeting.

Including discussion on RAN2 aspects of paging collision avoidance

[R2-2107326](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107326.zip) Open Issues on Paging Collision Avoidance CATT discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107388](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107388.zip) Solutions for paging collision Qualcomm Incorporated discussion

[R2-2107855](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107855.zip) Paging Collision avoidance vivo discussion

[R2-2107974](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107974.zip) Paging collision avoidance Ericsson discussion

[R2-2108015](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108015.zip) Definition and solution for paging collision, RRC Inactive, SI change Lenovo Mobile Com. Technology discussion LTE\_NR\_MUSIM-Core

[R2-2108119](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108119.zip) Paging Collision Avoidance Open Issues Huawei, HiSilicon discussion Rel-17 [R2-2105917](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105917.zip)

[R2-2108724](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108724.zip) Considerations on Paging Collision LG Electronics discussion Rel-17 LTE\_NR\_MUSIM-Core [R2-2106109](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106109.zip)

Web Conf (Monday 2nd week) (0)

* This AI will not be discussed in this meeting unless SA2 LS is received (RAN2 sent LS to SA2 from last meeting)

### 8.3.3 UE notification on network switching for multi-SIM

Including discussion on whether RAN2 decision on NAS-based busy indication can be retained (cv. SA2 LS [S2-2105150](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_145E_Electronic_2021-05/Docs/S2-2105150.zip))

Including discussion on "configured time" for AS-based solution.

Including interaction between AS-based solution and NAS-based solution for network switching

Including outcome of [Post114-e][242][MUSIM] Switching message details (vivo)

Including outcome of [Post114-e][243][MUSIM] Gap handling (ZTE)

Web Conf (Monday 1st week), SA2 LS (1)

Busy indication: AS vs. NAS, including AS/NAS interactions

[R2-2107856](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107856.zip) Open Issues on Switching Notification vivo discussion

*Observation 1: UE’s ongoing procedures may be impacted by switching to network B without leaving connected state in network A, such as RLM, handover, etc.*

*Proposal 1: RAN2 retains the agreement on NAS-based busy indication for RRC\_INACTIVE, and Reply SA2.*

*Proposal 2: To minimize the interruption of ongoing service in network A, UE is allowed to stay in RRC\_ CONNECTED in network A while entering the RRC\_ CONNECTED state in network B for short time activities, e.g. SMS, RAU, TAU, busy indication, etc.*

*Proposal 3: The range of absence time to use in the procedure for “switching without leaving RRC Connected state” is no more than 200ms.*

*Proposal 4: Regarding switching with leaving RRC\_CONNECTED, NAS-based solution is initiated by UE only when AS-based solution is not supported by either UE or network.*

*Proposal 5: RAN2 to consider allowing UE to ignore multi-SIM gap for some critical scenarios, e.g. T310 or T312 running and suspend some timers of Scell and BWP to avoid unnecessary deactivation of Scell or BWP switching.*

- OPPO thinks NAS-based solution is aligned with previous RAN2 agreement. but SA2 didn't harmonize IDLE and INACTIVE, which is not aligned.

- MTK thinks NAS-based busy indication in INACTIVE could be just dropped from Rel-17.

- QC thinks SA2 agreed to CR so it's possible. Hence we should keep the previous agreement.

Show of hands

1. Do not support busy indication for INACTIVE in Rel-17: 4 (MTK, Nokia, QC, Huawei)
2. Support NAS-based busy indication in Rel-17 for IDLE and INACTIVE (previous decision): 15 (QC, Lenovo, Intel, huawei, DENSO, Charter, vivo, LGE, ZTE, Xiaomi, OPPO, Apple, ASUSTek, NEC)

Agreement

1 RAN2 retains the agreement on NAS-based busy indication for RRC\_INACTIVE, and Reply SA2.

* Draft LS reply to SA2 in email discussion [230] (Intel)

[R2-2107265](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107265.zip) Analysis on AS-based solution and NAS-based solution China Telecommunications discussion

[R2-2108076](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108076.zip) Interaction between AS-based solution and NAS-based solution for network switching ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107301](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107301.zip) NAS and AS procedures and their interaction for aperiodic gap request Intel Corporation discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107027](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107027.zip) Interaction between AS-based and NAS-based Solution for Network Switching OPPO discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2108804](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108804.zip) Signalling design on busy indication procedure DENSO CORPORATION discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2108052](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108052.zip) Discussion on AS based Leaving in MultiSIM Sony discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2108709](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108709.zip) Interaction between NAS and AS for network switching ASUSTeK discussion Rel-17 LTE\_NR\_MUSIM-Core

Web Conf (Monday 1st week), gap handling email disc (1)

Outcome of [Post114-e][243][MUSIM] Gap handling (ZTE)

[R2-2108077](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108077.zip) Summary of [Post114-e][243][MUSIM] Gap handling ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_MUSIM-Core Late

Discussion

- OPPO has concerns on S2 and S3 due to long window. Might require very long gap length and this will impact RAN4. Could be fine with working assumption. Ericsson agrees but thinks we will see the impacts when we progress the work.

- Huawei wonders why S4 was removed? Chair explains it had less support than others. Could be left as FFS if needed. Ericsson think it may not be in the scope.

- Ericsson thinks we could do aperiodic gaps with periodic gaps.

- NEC thinks RNAU is S3, not S4 since UE doesn't enter RRC\_CONNECTED. Wonders if per-UE-level scheduling gap applies to both MCG and SCG? ZTE confirms this was the intent. This might require some coordination between MCG and SCG but this is out of WI scope. So we might not allow MR-DC with MUSIM.

- Xiaomi thinks we should remove S4 since it's out of WI scope.

- QC asks if the scenarios are going to be captured? Apple thinks we shouldn't do that.

Agreements

Scenarios and supported gap types

1 RAN2 aims to support at least the below scenarios 1/2/3 in Rel-17 for cases when the UE is allowed to switch to network B without leaving connected state at network A.

- Scenarios 1: Periodic switching, including SSB detection/paging reception, serving cell measurement, neighboring cell measurement including intra-frequency,inter-frequency and inter-RAT measurement;

- Scenarios 2: SI receiving at network B;

- Scenarios 3: Aperiodic (one-shot) switching with both transmission and reception at network B but will not enter RRC-connected state in NW B (e.g. no RRC connection Resume/Setup) at network B, including On-demand SI request;

2 For switching without leaving connected state at network A, support gap types 2a (Normal periodic gap) and 2b (Normal aperiodic gap) in Rel-17.

3 Only per UE level scheduling gap is supported in Rel-17 for non-DC. FFS if we support MR-DC.

The scenarios will only be used for deriving RRC parameters. No need to capture them in e.g. Stage-2.

- Nokia wonders why we restrict to two periodic gaps? ZTE clarifies that too many gaps would make it difficult for implementations and RAN4.

- OPPO wonders why P4 can be captured in specification. Fine with P5-7 but thinks only two periodical gaps are enough.

- Huawei thinks periodical gap is better for SI reception as UE receives the SI according to SearchSpace in scheduled slot. UE may not acquire it in the first try.

- QC thinks 2 periodic + 1 aperiodic is too restrictive. But we have other use cases like inter-frequency measurements. It's not clear if these are sufficient in practice and UE would ask for longer gap. vivo thinks these are not for RRM measurements.

 - vivo agrees with P5-7 and thinks RAN4 should just confirm the numbers. Could have working assumption for this and discuss if there are issues.

- Ericsson thinks we could just state "at most 3 gaps can be configured".

- Nokia thinks at least 3 periodic gaps are needed.

- MTK thinks the absolute upper limit is important.

Agreements

Gap configuration and activation

5 The network is allowed to configure at most 3 gap patterns (for any MUSIM purpose).

6 Only a single aperiodic gap (for MUSIM) is supported in Rel-17. At most two periodic “gaps” (for MUSIM) and a single aperiodic gap (for MUSIM) is supported in Rel-17. FFS if signalling supports more.

7 The SFN and subframe of the PCell of the network A is used in the gap configuration to calculate the gap.

- LGE supports 8-12 but wonders what "can" means in P9? Does it mean network doesn't do it always?

- OPPO wonders if P8 only applies to periodic or all types of gaps? Chair thinks it does.

- OPPO thinks that P12 can be removed based on previous agreements.

- Ericsson thinks that P16 means just UE input and does not mandate network.

- Samsung thinks we should use "configure" in P10.

- Xiaomi wonders if P8 applies to autonomous gaps?

- Apple wonders if UE can request gap release in P16?

Agreements

Periodic/Aperiodic/autonomous Gap configuration and activation

8: The switching gap configuration will explicitly provide the gap starting position (e.g. offset value or start SFN and subframe explicitly), gap length and gap repetition period.

10: Switching Gaps (of any type) are configured or released by RRC signalling (e.g. RRCReconfiguration message) in Rel-17. FFS if gap can be released autonomously by UE after N repetitions.

Gap configuration assistance information

16 UE is allowed to include assistance information for setup or release of gaps for both 1) periodic gaps and 2) aperiodic gap in one UEAssistanceInformation Msg.

18 To report the assistance information, the UE maps the timing info of the Gap on the network B to the network A and reports the mapped timing info to the network A.

20 For the gap assistance information, the Gap start time, Duration of the gap and gap repetition period (for periodic) may be included. FFS is other information is included (e.g. gap purpose).

* Do not support autonomous gaps for MUSIM in Rel-17.

**Chairman's proposal for online discussion (based on the email discussion proposals)**

*Scenarios and supported gap types*

*Proposal 1: RAN2 aims to support at least the below scenarios 1/2/3 in Rel-17 for cases when the UE is allowed to switch to network B without leaving connected state at network A.*

*- Scenarios 1: Periodic switching, including SSB detection/paging reception, serving cell measurement, neighboring cell measurement including intra-frequency,inter-frequency and inter-RAT measurement;*

*- Scenarios 2: SI receiving at network B;*

*- Scenarios 3: Aperiodic (one-shot) switching with both transmission and reception at network B but will not enter RRC-connected state in NW B (e.g. no RRC connection Resume/Setup) at network B, including On-demand SI request;*

*FFS whether scenarios 4 is supported (Scenario 4: Aperiodic (one-shot) switching and enter into connected state (e.g. with RRC connection Resume/Setup) at network B, including Registration, SMS, RAU, busy Indication, etc.)*

*Proposal 2: For switching without leaving connected state at network A, support gap types 2a (Normal periodic gap) and 2b (Normal aperiodic gap) in Rel-17. ~~UE does not transmit or receive during the gap duration.~~*

*Proposal 3: Only per UE level scheduling gap is supported in Rel-17.*

*Gap configuration and activation*

*Proposal 4: At least Gap Type 2b (normal aperiodical gap) will be supported for SI reception fr network B. FFS on the exact details (e.g. length, gap pattern interworking, etc.)*

*Proposal 5: For scenario 1, the network is allowed to configure at most 2 periodic Gap patterns (for any purpose).*

*Proposal 6: Only a single aperiodic gap is supported in Rel-17. At most two periodic “gaps” and a single aperiodic gap is supported in Rel-17.*

*Proposal 7: The SFN and subframe of the PCell of the network A is used in the gap configuration to calculate the gap.*

*Periodic/Aperiodic/autonomous Gap configuration and activation*

*Proposal 8: The switching gap configuration will explicitly provide the gap starting position (e.g. offset value or start SFN and subframe explicitly), gap length and gap repetition period.*

*Proposal 9: The network can activate multiple periodic switching gaps at the same time.*

*Proposal 10: Switching Gaps (of any type) are activated by RRC signalling (e.g. RRCReconfiguration message) in Rel-17.*

*Proposal 12: The network can activate multiple aperiodic Gaps at the same time only when the network can configure multiple aperiodic Gaps at the same time.*

*Gap configuration assistance information*

*Proposal 16: UE is allowed to include assistance information for both 1) multiple periodic gaps and 2) single aperiodic gap in one UEAssistanceInformation Msg.*

*Proposal 18: To report the assistance information, the UE maps the timing info of the Gap on the network B to the network A and reports the mapped timing info to the network A.*

*Proposal 20: For the gap assistance information, the Gap start time, Duration of the gap and gap repetition period (for periodic) shall be included. FFS is other information is included (e.g. gap purpose).*

***Scenarios and supported gap types***

*Proposal 1: Ran 2 confirm that for the below scenario 1/2/3, the UE is allowed to switch to network B without leaving connected state at network A. For the scenario 4, it’s FFS.*

*- Scenarios 1: Periodic switching, including SSB detection/paging reception, serving cell measurement, neighboring cell measurement including intra-frequency,inter-frequency and inter-RAT measurement;*

*- Scenarios 2: SI receiving at network B;*

*- Scenarios 3: Aperiodic (one-shot) switching with both transmission and reception at network B but will not enter RRC-connected state in NW B (e.g. no RRC connection Resume/Setup) at network B, including On-demand SI request;*

*- Scenarios 4: Aperiodic (one-shot) switching and enter into connected state (e.g. with RRC connection Resume/Setup) at network B, including Registration, SMS, RAU, busy Indication, etc.*

*Proposal 2: For switching without leaving connected state at network A, both Gap type 2a/2b would be considered. Gap type 3a/3b would not be considered. FFS on gap type 1a.*

*• Gap Type 1a: Autonomous gap*

 *o Similar to the autonomous gap defined for CGI reporting; network does not know the exact time occasions (within gap duration) that UE switches to network B, as long as UE fulfills the minimum transmission requirement.*

*• Gap Type 2a: Normal periodical gap*

 *o UE does not transmit or receive during the periodical gap duration;*

*• Gap Type 2b: Normal aperiodical gap*

 *o UE does not transmit or receive during the aperiodical gap duration;*

*• Gap Type 3a: Periodical gap with reduced capability:*

 *o UE can be scheduled by network A during the periodical gap duration, but with reduced capability (e.g. reduced MIMO layers, details are FFS).*

*• Gap Type 3b: Aperiodical gap with reduced capability:*

 *o UE can be scheduled by network A during the aperiodical gap duration, but with reduced capability (e.g. reduced MIMO layers, details are FFS).*

*Proposal 2.1: For the periodic switching in the scenario 1, gap type 2a would be adopted; For the aperiodic switching in the scenario 3, gap type 2b would be adopted, FFS on gap type 1a;*

*Proposal 2.2: Which gap types shall be adopted for the scenario 2 can be further discussed in the phase 2.*

*Proposal 2.3: For the aperiodic switching in the scenario 4, if supported, gap type 2b would be adopted*

*Proposal 3: Only per UE level scheduling gap would be considered. (19/21)*

*Gap configuration and activation*

*Proposal 4: RAN2 to further confirm which Gap types shall be supported for the SI receiving:*

*• Gap Type 1a: Autonomous gap (8/21)*

*• Gap Type 2a: Normal periodical gap(8/21)*

*• Gap Type 2b: Normal aperiodical gap (14/21)*

*Proposal 4a: If the aperiodical gap was supported, RAN2 further confirm whether an aperiodic gap can cover multiple SI periods and whether it supports to assign an additional periodic gap pattern in the aperiodic gap.*

*Proposal 5: For cases/events included the scenario 1, the network is allowed to configure at most 2 periodic Gap patterns (20/21). No need to specify or associate the gap pattern to the gap purpose. (10/21)*

*Proposal 5a: Even the periodic Gap pattern was adopted for the SI receiving, at most 2 periodic Gap patterns are allowed to be configured for the MUSIM. (18/21)*

*Proposal 6: For the RRC signaling based activation scheme, the “RRC signaling for network switching without leaving RRC\_Connected state” is not allowed to configure multiple aperiodic gaps with different parameters (e.g. Durations)(13/21). FFS for the case with the L1/L2 activation mechanism. (2/21)*

*Proposal 6a: “RRC signaling for network switching without leaving RRC\_Connected state” is allowed to configure multiple periodic “gaps” and an aperiodic Gap (or multiple aperiodic Gaps if it was supported in the proposal 6) simultaneously.(19/21)*

*Proposal 7: The SFN and subframe of the PCell of the network A is used in the gap configuration to calculate the gap. (19/21)*

*Periodic Gap configuration and activation*

*Proposal 8: For the periodic Gap configuration, the “starting timing info (e.g. offset value or start SFN and subframe explicitly), gap length and gap repetition period shall be included. (21/21).*

*Proposal 9: The network can active multiple periodic Gaps at the same time. (21/21).*

*Proposal 10: Active the periodic Gaps by RRC signalling, e.g. upon receiving the RRC Reconfiguration message. (21/21).*

*Aperiodic Gap configuration and activation*

*Proposal 11: For the aperiodic Gap configuration, the “starting timing info (e.g. offset value or start SFN and subframe explicitly) and gap length shall be included. (20/21).*

*Proposal 12: The network can active multiple aperiodic Gaps at the same time only when the network can configure multiple aperiodic Gaps at the same time.*

*Proposal 13: For the aperiodic Gap activation, take the “RRC signalling, e.g. upon receiving the RRC Reconfiguration message to active the aperiodic gap” as baseline. (21/21) FFS on the MAC CE scheme.(5/21).*

*Autonomous Gap configuration and activation (if supported)*

*Proposal 14: If autonomous Gap was supported, RAN2 to discuss which element shall be included for the autonomous gap configuration, an indication that similar to “useAutonomousGaps” for CGI reading or the autonomous gap length or both.*

*Proposal 15: If autonomous Gap was supported, it shall be activated by the RRC signalling, e.g. upon receiving the RRC Reconfiguration message. (11/11)*

*Gap configuration assistance information*

*Proposal 16: UE is allowed to include multiple periodic Gaps assistance information (e.g. periodicities and durations) simultaneously e.g. in one UEAssistanceInformation Msg.*

*Proposal 17: If only the RRC signaling based activation scheme was supported, UE is not allowed to include multiple aperiodic Gaps assistance information (e.g. periodicities and durations) simultaneously e.g. in one UEAssistanceInformation Msg (16/21). If MAC CE based activation scheme was supported, RAN2 to discuss whether the UE is not allowed to include multiple aperiodic Gaps assistance information.*

*Proposal 17a: UE is allowed to include multiple periodic gaps and an aperiodic Gap (or multiple aperiodic gaps if allowed in the proposal 17) assistance information simultaneously, e.g. in one UEAssistanceInformation Msg.*

*Proposal 18: To report the assistance information, the UE maps the timing info of the Gap on the network B to the network A and reports the mapped timing info to the network A. (21/21)*

*Proposal 19: If autonomous Gap was supported, the UE shall include the duration of the gap for the autonomous gap request in the assistance information (8/11). FFS on the autonomous gap needed or not indication (3/11).*

*Proposal 20: For the periodic Gap assistance information, the Gap start time, Duration of the gap and gap repetition period shall be included (21/21). FFS on the indication of need for Gap (3/21) and the gap purpose (2/21).*

*Proposal 21: For the aperiodic Gap assistance information, the Gap start time, Duration of the gap shall be included. (20/21).*

Email discussions ([230])

* [AT115-e][230][MUSIM] Discussion on AS vs. NAS-based busy indication (Intel)

Scope:

* + - Discuss details required to reply to SA2/CT1 and draft the reply LS

 Intended outcome:

* + - Draft LS to SA2/CT1 in [R2-2108856](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108856.zip) (by email rapporteur).

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 1st week Wed, UTC 0900
		- Initial deadline (for draft LS): 1st week Wed, UTC 1700

Web Conf (2nd Week Friday)

Post-meeting email discussions ([235])

- OPPO thinks RAN4 has not TUs for this WI. vivo thinks this can be discussed in RAN.

- Nokia thinks we can have two phases: First on which gaps do not affect RAN4, then those that do. QC thinks we could CC RAN1. Huawei wonders why? QC explains this is just in case.

* [Post115-e][235][MUSIM] LS to RAN4 on gap handling for MUSIM (vivo)

 Scope: Draft LS to RAN4 (CC:RAN) on gap handling and request feedback on RAN2 agreements. Can ask about gap cycle and duration for all gap types and whether these have impact to RAN4.

 Intended outcome: approved LS (in [R2-2108861](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108861.zip))

 Deadline: Short

By Email (outcome of [230])

[R2-2108856](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108856.zip) [Draft] Reply LS on NAS-based busy indication Intel LS out Rel-17 LTE\_NR\_MUSIM-Core To:SA2, RAN3 Cc:SA3, CT1

* [230] Can be approved, revised in [R2-2108855](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108855.zip)

[R2-2108855](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108855.zip) Reply LS on NAS-based busy indication RAN2 LS out Rel-17 LTE\_NR\_MUSIM-Core To:SA2, RAN3 Cc:SA3, CT1

* [230]] Approved (unseen)

Web Conf (Monday 1st week), switching details email disc (1)

Outcome of [Post114-e][242][MUSIM] Switching message details (vivo)

[R2-2107857](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107857.zip) Summary of Switching message details vivo discussion

Discussion

P1

- Lenovo thinks we agreed to this already. vivo clarifies this is more than gap configuration and UE can also indicate preferred RRC state. Lenovo wonders if UE wouldn't stay in CONNECTED if it reports gap configuration? vivo thinks both could be indicated.

- Huawei wonders why UE would indicate RRC state if it indicates gap pattern? vivo clarifies that UE would just tell it wants to leave. Ericsson agrees with Huawei but thinks we don't need "after switching". Samsung agrees that UE shouldn't provide both gap configuration and RRC state-

- Nokia thinks these assitstance informations could be different. QC thinks this is just about leaving RRC\_CONNECTED.

2nd week

- Ericsson thinks both versions of P1 are fine. Former is just more detailed. Samsung agrees. QC thinks we already have RRC state in UAI. Apple agrees.

- Huawei prefers the latter proposal.

* 1 UE can indicate it wants to leave RRC\_CONNECTED in assistance information for MUSIM (FFS for signalling details, e.g. UAI).

Signalling details

*Online proposals (not agreed yet)*

*1 UE can indicate its preferred RRC State in assistance information for MUSIM (FFS for signalling details).*

*1 UE can indicate it wants to leave RRC\_CONNECTED in assistance information for MUSIM (FFS for signalling details).*

*Proposal 1: The switching notification message carries assistance information, including Assistant information for gap configuration and the preferred RRC State after switching (FFS for the detailed state).*

- Apple wonders how UAI works for staying in CONNECTED state. Does network configure whether state reporting is allowed? Chair clarifies this is Stage-3 details.

* 3: UEAssistanceInformation message is extended for switching notification in both network switching procedures for leaving RRC\_CONNECTED state and without leaving RRC\_CONNECTED state.
* 6: UE is configured to provide assistance info for switching notification via otherConfig of RRCReconfiguration message

- OPPO agrees wtih P8 but would like to clarify it's RRC timer. Intel wonders what UE does if the timer is not configured? Samsung thinks then UE should not go to IDLE without response. Ericsson agrees.

- vivo thinks this can be discussed later.

- Huawei thinks we could always configure finite time for waiting time.

* 8: Introduce a new RRC timer for the “configured time”, used for the UE to leave RRC\_CONNECTED without a response.
* FFS if it's possible to configure UE to always wait for the network response (e.g. "infinite" waiting time)

- Samsung supports P7. Nokia thinks this is something that can be pre-configured and would like to allow that if network wants it. QC agrees that we should avoid out-of-sync issues and always going to IDLE. Apple also supports pre-defined configuration.

- Ericsson think network would normally provide the response. Not sure we need to optimize. vivo and Samsung agree.

*Proposal 7: Network can configure whether UE enters RRC\_INACTIVE or RRC\_IDLE state if no NW response message is received within a certain configured time period after the network switching notification message is sent.*

* 7: UE is not allowed to enter RRC\_INACTIVE state if no NW response message is received within a certain configured time period after the network switching notification message is sent.

- Ericsson is fine but thinks this is details. Can consider later on.

* 9: As baseline, how to handle the case, that UE performs switching without the response from network for a configured time during switching procedure without leaving RRC\_CONNECTED state, is not specified. Can re-discuss if there are serious issues found.

Needs discussion or left FFS

- Samsung thinks SA2 will not discuss this and we could just remove piggybacking entirely. LGE agrees but thinks we need to see SA2 conclusions first.

*Proposal 4: FFS reuse preferredRRC-State or some changes on preferredRRC-State for Multi-SIM purpose.*

*Proposal 5: RAN2 to discuss whether switching notification for leaving RRC\_CONNECTED state and without leaving RRC\_CONNECTED state can be enabled separately.*

*Proposal 10: RAN2 to discuss Whether early return is allowed during switching procedure without leaving RRC\_CONNECTED state*

Busy indication details

[R2-2107026](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107026.zip) Further Consideration for Busy Indication OPPO discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107237](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107237.zip) Considerations on Busy Indication Approach Samsung discussion

[R2-2107891](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107891.zip) Switching notification and busy indication Lenovo, Motorola Mobility discussion Rel-17

[R2-2108360](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108360.zip) Busy Indication in Multi-SIM Qualcomm Incorporated discussion

Busy indication in RRC\_INACTIVE

[R2-2108737](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108737.zip) Busy indication in INACTIVE mode MediaTek Inc. discussion Rel-17 LTE\_NR\_MUSIM-Core [R2-2106351](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106351.zip)

[R2-2107807](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107807.zip) Further analysis on NAS level solutions for RRC-INACTIVE Nokia, Nokia Shanghai Bell discussion Rel-17

[R2-2108121](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108121.zip) On busy indication in RRC\_INACTIVE Huawei, HiSilicon discussion

[R2-2108051](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108051.zip) Discussion on Busy Indication in Inactive State Sony discussion Rel-17 LTE\_NR\_MUSIM-Core [R2-2105683](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105683.zip)

[R2-2108075](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108075.zip) Consideration on the busy indication at Inactive state ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_MUSIM-Core

Network switching and configured time:

[R2-2107791](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107791.zip) Open Issues for MUSIM Network Switching Charter Communications, Inc discussion

[R2-2107808](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107808.zip) On switching notification solutions for MUSIM operation Nokia, Nokia Shanghai Bell discussion Rel-17

[R2-2107973](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107973.zip) Discussion on switching procedure without leaving RRC\_CONNECTED state Ericsson discussion

[R2-2107975](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107975.zip) Discussion on switching procedure for leaving RRC\_CONNECTED state Ericsson discussion

[R2-2108031](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108031.zip) On coordinated switch from NW for MUSIM device Huawei, HiSilicon discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2108182](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108182.zip) Further consideration on the remaining issues of scheduling Gap ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107477](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107477.zip) Network switching for Multi-USIM devices during dual connectivity Samsung discussion

[R2-2108732](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108732.zip) Further discussion on switching message details Samsung Electronics Co., Ltd discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107327](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107327.zip) Open Issues on Network Switching CATT discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107025](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107025.zip) Discussion on Configured Time for AS-based Solution OPPO discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107459](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107459.zip) Network switching with leaving RRC Connected State of Multi-SIM China Telecommunication discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107597](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107597.zip) Signaling aspects of MUSIM Network Switching Apple discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107598](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107598.zip) MUSIM Band Conflict-RRC Processing Delay-Caller ID Requirements Apple discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107781](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107781.zip) Open issues on scheduling gap for network switching NEC discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107789](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107789.zip) RAN Initiated Network switching with Leaving RRC\_CONNECTED SHARP Corporation discussion

[R2-2108361](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108361.zip) Leaving Connected state in Multi-SIM Qualcomm Incorporated discussion

[R2-2108387](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108387.zip) Discussion about the usage of the autonomous gap Xiaomi Communications discussion

[R2-2108725](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108725.zip) Considerations on SIM Swithcing LG Electronics discussion Rel-17 LTE\_NR\_MUSIM-Core [R2-2106110](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106110.zip)

[R2-2108726](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108726.zip) Scheduling Gap Handling LG Electronics discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2108755](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108755.zip) Procedures for MSIM UE notification on network switching Futurewei Technologies discussion [R2-2105445](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105445.zip) Late

### 8.3.4 Paging with service indication

Including details of the paging cause value support and, if necessary, discussion on additional feedback to SA2

Web Conf (Monday 1st week), paging service indication (2)

[R2-2108101](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108101.zip) Detailed methods of the paging cause support for MUSIM Xiaomi Communications discussion [R2-2106401](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106401.zip)

*Proposal 1: RAN2 discusses the above two methods to indicate paging cause value considering SA2’s request and agreement.*

*Proposal 2: Method#2 (Define a new pagingcause IE in the legacy PagingRecord IE) should be adopted to indicate the paging cause.*

[R2-2108122](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108122.zip) Discussion on the paging with service indication Huawei, HiSilicon discussion Rel-17 [R2-2105921](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105921.zip)

*Proposal: A single value of voice for paging cause indication with parallel list approach should be adopted to introduce paging cause for voice indication.*

[R2-2108727](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108727.zip) Support of Paging Cause LG Electronics discussion Rel-17 LTE\_NR\_MUSIM-Core [R2-2106111](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106111.zip)

*Proposal 1. For paging cause, RAN2 adds 1-bit information to indicate voice service in the paging message.*

*Proposal 2. For paging cause, RAN2 adds 1-bit information to discriminate whether to support the paging cause feature in system information.*

[R2-2107379](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107379.zip) Paging Prioritization Qualcomm Incorporated discussion

*Observation 1: The paging message will include an indication that the cause of the page is for IMS voice.*

*Observation 2: The NW will use this indication when the UE supports such indication. Since the capability will be at NAS layer, this has no RAN2 impact.*

*Observation 3: The UE should be capable of differentiation between Paging from a network that does not support the Paging Cause Indication for Voice Service feature and Paging without the Voice Service Indication.*

*Observation 4: To fullfill the requirement in Observation 3, SA2 relies on RAN2 decision.*

*Proposal 1: A new cause value is added to the paging message (in PagingRecord) in both LTE and NR to indicate the cause as IMS voice.*

*Proposal 2: RAN2 to select between the following options to differentiate between Paging from a network that does not support the Paging Cause Indication for Voice Service feature and Paging without the Voice Service Indication:*

*Option A: The new cause indication in the paging message has two values of “voice” and “other”.*

*Option B: The support for the Paging Cause Indication for Voice Service is broadcast in SIB1.*

[R2-2107298](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107298.zip) Solution analysis for supporting Multi-SIM paging cause Intel Corporation discussion Rel-17 LTE\_NR\_MUSIM-Core

*Proposal 1: RAN2 to agree that MUSIM UE discriminates whether it is paged from RAN supporting paging cause feature or not, by just receiving Uu paging message (i.e. no additional indication is needed outside Uu paging message to inform RAN’s support of paging cause feature or not).*

*Proposal 2: Do not extend the legacy PagingRecord IE for paging cause.*

*Observation: There is not a big difference between the different ASN.1 coding options for non-critical extension of Paging PDU.*

*Proposal 3: Introduce an explicit indication of network support for voice cause in Paging message. Choose between the options b) and d) for indication “voice” cause.*

Web Conf (2nd week Friday) (1)

* Discuss further details in post-meeting email discussion [236] (Huawei)
* [Post115-e][236][NR] Paging with service indication (Huawei)

 Scope: Discuss remaining open issues for paging with service indication and try to have draft CRs to illustrate the necessary modifications to specifications. Can discuss which specifications are affected. Can also discuss AS/NAS interactions with paging cause.

 Intended outcome: report + draft CRs

 Deadline: Long

[R2-2108549](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108549.zip) Discussion on paging service indication for MUSIM Futurewei Technologies discussion [R2-2105451](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105451.zip)

[R2-2107028](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107028.zip) Paging with Service Indication OPPO discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107180](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107180.zip) Further discussion on introduction of paging cause China Telecommunications discussion

[R2-2107349](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107349.zip) Discussion on the transmission of paging cause Spreadtrum Communications discussion Rel-17

[R2-2107350](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107350.zip) Supporting of Paging Cause Solution detection Spreadtrum Communications discussion Rel-17

[R2-2107809](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107809.zip) Service type Indication in paging for LTE/EPC Nokia, Nokia Shanghai Bell discussion Rel-17

[R2-2107858](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107858.zip) Introduction of Paging Cause vivo discussion

[R2-2107928](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107928.zip) Discussion on support of paging cause for Multi-USIM devices Samsung Electronics Co., Ltd discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2107976](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107976.zip) Introduction of a Paging cause indication Ericsson discussion

[R2-2108074](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108074.zip) Consideration on the Service Indication ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2108738](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108738.zip) Paging with service indication MediaTek Inc. discussion Rel-17 LTE\_NR\_MUSIM-Core [R2-2106353](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106353.zip)

## 8.8 RAN slicing

(NR\_Slice -Core; leading WG: RAN2; REL-17; WID: RP-211289)

Time budget: 0.5 TU

Tdoc Limitation: 2 tdocs

Email max expectation: 2 threads

### 8.8.1 Organizational

Rapporteur input and running CRs

Web Conf (Monday 1st week) (1+1)

[R2-2106972](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106972.zip) LS on Cell reselection with band-specific network slices (S2-2105158; contact: Nokia) SA2 LS in Rel-17 eNS\_Ph2 To:RAN2, RAN3

*(moved from 8.22)*

- Samsung wonders if there is benefit to sending configured NSSAI over "target NSSAI" (i.e. CR attached to this LS)? This would create complexity to NG-RAN? Nokia thinks this is optional for RAN node anyway. It only provides more optimized camping policies for network.

- LGE thinks there is no RAN2 impact and this is RAN3 work only. Benefits seem to be marginal, though. Ericsson agrees and wonders why target NSSAI is not mentioned? Nokia thinks this is connected to RAN3 discussion but agrees there is no RAN2 impact.

- Lenovo thinks the LS tries to have NSSAI assistance that can be used by network.

* Will discuss reply LS after RAN slicing online session on 1st week Tuesday
* Noted

Post-meeting email discussions (running CRs)

* No email discussion for UE capabilities. Will be considered in dedicated agenda in the next meeting (may use a summary document).
* [Post115-e][244][Slicing] Running NR RRC CR for RAN slicing (Huawei)

Scope: Create running NR RRC CR for RAN slicing based on agreements

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][245][Slicing] Running 38.304 CR for RAN slicing (CMCC)

Scope: Create running 38.304 CR for RAN slicing based on agreements

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][246][Slicing] Running Stage-2 CRs for RAN slicing (Nokia)

Scope: Create running Stage-2 CRs (38.300 and/or 37.340) for RAN slicing based on agreements

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][247][Slicing] Running MAC CR for RAN slicing (OPPO)

Scope: Create running 38.321 CR for RAN slicing based on agreements (avoid overlap with general RACH partiotioning)

 Intended outcome: Running CR

 Deadline: Long

### 8.8.2 Cell reselection

Including discussion on whether SA2 proposal on band-specific slices in cell reselection has impacts on the RAN (cv. SA2 LS [R2-2106972](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106972.zip) / [S2-2105158](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_145E_Electronic_2021-05/Docs/S2-2105158.zip))

Including outcome of [Post114-e][251][Slicing] Solution direction details for slice priorities in cell reselection (Lenovo)

Including discussion on how "slice group" can be defined and indicated to UE

As 1st priority, including details of slice availability in terms of Slice grouping and frequency priority information for broadcast and RRC Release message, usage of “intended slice” (FFS whether we use this term in specification), UE prioritisation of slice when there is more than one intended slice and how UE determines frequency priority for inter-frequency cell reselection based on these.

As 2nd priority, including details of slice based reselection for MO, different RSRP/RSRQ thresholds for inter and intra-frequency slice based cell reselection, need for Validity area in RRC Release

Web Conf (Monday 1st week) (1+1)

Including discussion on whether SA2 proposal on band-specific slices in cell reselection has impacts on the RAN (cv. SA2 LS [R2-2106972](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106972.zip) / [S2-2105158](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_145E_Electronic_2021-05/Docs/S2-2105158.zip)))

[R2-2107951](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107951.zip) Reply proposal for LS on cell reselection with band-specific network slices (S2-2105158/ [R2-2106972](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106972.zip)) Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_slice-Core

*(moved from 8.8.1)*

[R2-2107372](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107372.zip) Discussion on slice based cell reselection Spreadtrum Communications discussion Rel-17

[R2-2108554](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108554.zip) Discussion on slice based cell reselection under network control Huawei, HiSilicon discussion Rel-17 NR\_slice-Core

Web Conf (Tuesday 1st week) (1+1)

Including outcome of [Post114-e][251][Slicing] Solution direction details for slice priorities in cell reselection (Lenovo)

[R2-2108025](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108025.zip) Summary of [Post114-e][251][Slicing] Solution direction Lenovo, Motorola Mobility (Rapporteur) discussion NR\_slice-Core

Discussion

- Samsung thinks we need to address the FFS before agreeing to option 4 (step 6 & 7). If step 4 uses "slice", step 6 may not be needed.

- CMCC can accept solution 4 but thinks it may lead UE to reselect to a cell that only supports 1st priority slice but not lower priority slices. Solution 5 may help in that. LGE agrees and would like to keep step 7 as FFS to allow second-priority slices to be considered. QC thinks step 7 could be removed entirely. Apple agrees but thinks CMCC point is valid so could be considered based on option 5.

- Intel is fine with option 4 but thinks we need to discuss the steps further in details online.

- Nokia thinks "selected slice support" step 5 may not be needed and might just delay cell reselection procedure due to SIB reading. Would like to avoid SIB reading. ZTE agrees. Apple thinks serving cell could indicate the neighbour cell slice information.

- Step 1: Intel thinks that we need to ask SA2/CT1 for the list. Need to discuss what "list" means. Lenovo clarifies this is list in AS and this is sorted according to priority. Where the list comes from is different question. Priority value could be part of the list or be in order of priority. NAS provides the information to AS and AS uses it.

- Apple thinks SA2 already discussed priority information and rejected it. UE may not be able to do it.

- CATT thinks we need to check frequency priorities. Samsung thinks UE measuring all frequencies may not need step 6.

- KDDI thinks current measurement rules depend on serving cell level. Low priority frequencies are only measured if serving cell level is low. Lenovo agrees.

- BT wonders if UE would be required to measure same frequency twice for different slices? Lenovo clarifies this is up to UE implementation (same as legacy). Could depend on RAN4 requirements.

- Step 5: Intel wonders what the frequency priority of the assigned cell is? Measurement rules are based on that. Lenovo thinks this is a valid question but was not discussed before. thinks it's as applicable for the corresponding slice, i.e. frequency priority comes from the slice. Ericsson thinks UE follows the priority of the serving cell.

- Step 6: BT wonder if we should check slice frequencies instead of cell frequencies?

Agreements

* RAN2 needs to check with SA2/ CT1 if it is alright for AS to expect to receive slice list as well as slice priority information from NAS for cell (re)selection. Ask about both slices and slice groups.
* [Post115-e][241][Slicing] Slice list and priority information for cell reselection (Lenovo)

 Scope: Ask SA2/CT1 (CC: SA1) if it is alright for AS to expect to receive slice list as well as slice priority information from NAS for cell (re)selection. Ask about both slices and slice groups and explain what "slice list" is.

 Intended outcome: approved LS

 Deadline: 4 weeks

Agreements

* 2 Following is taken as the baseline for Solution Option 4:

The “slice info” (for a single slice or slice group) agreed to be provided to the UE in the last RAN2 meeting using both broadcast and dedicated signaling are provided for the serving as well as neighboring frequencies. The following steps are used for slice based cell (re)selection in AS:

Step 0: NAS layer at UE provides slice information to AS layer at UE, including slice priorities.

Step 1: AS sorts slices in priority order starting with highest priority slice.

Step 2: Select slices in priority order starting with the highest priority slice.

Step 3: For the selected slice assign priority to frequencies received from network.

Step 4: Starting with the highest priority frequency, perform measurements (same as legacy).

Step 5: If the highest ranked cell is suitable (as defined in 38.304) and supports the selected slice in step 2 then camp on the cell and exit this sequence of operation; FFS: How the UE determines whether the highest ranked cell supports the selected slice.

Step 6: If there are remaining frequencies then go back to step 4.

Step 7: FFS: If the end of the slice list has not been reached go back to step 2.

Step 8: Perform legacy cell reselection.

* 1: Solution Option 4 is selected for further work i.e., resolve the FFSs, send any required LSs and consequently start to draft specification CRs.

*Proposal 2: Following is taken as the baseline for Solution Option 4:*

*The “slice info” agreed to be provided to the UE in the last RAN2 meeting using both broadcast and dedicated signaling are provided for the serving as well as neighboring frequencies. The following steps are used for slice based cell (re)selection:*

*Step 1: List slices in priority order starting with highest priority slice.*

*Step 2: Select slices in priority order starting with the highest priority slice.*

*Step 3: For the selected slice assign priority to frequencies received from network.*

*Step 4: Starting with the highest priority frequency, perform measurement according to the legacy procedure.*

*Step 5: If the highest ranked cell is suitable (as defined in 38.304) and supports the selected slice in step 2 then camp on the cell and exit this sequence of operation; FFS: How the UE determines whether the highest ranked cell supports the selected slice.*

*Step 6: If there are remaining cell frequencies then go back to step 4.*

*Step 7: FFS: If the end of the slice list has not been reached go back to step 2.*

*Step 8: Perform legacy cell reselection.*

*2 FFSs need to be resolved. In addition, based on the feedback from some companies, RAN2 needs to check with SA2/ CT1 if it is alright for AS to expect to receive slice list as well as slice priority information from NAS for cell (re)selection.*

**To be discussed later (2nd week)**

*Proposal 3: RAN2 to discuss if another Solution Option (one out of 5, 6 and 7) may also be shortlisted – If so, the final decision between Option 4 and Option ‘X’ need be taken.*

* Other solutions can be discussed based on company contributions (with technical analysis) next time.
* After online session, it was noted that the solution 4 FFSs were not resolved. Email discussion is assigned to try to tackle those (as they may involve LS to RAN4).
* [Post115-e][244][Slicing] Resolving solution 4 FFs (Lenovo)

      Scope: Attempt to resolve solution 4 FFSs, including understanding if there are any impacts to RAN4 requirements. Can draft LS to RAN4 in case any potential impacts are identified.

      Intended outcome: report + draft LS to RAN4 (if needed)

      Deadline:  Long

[R2-2108842](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108842.zip) Resolving FFSs for Option 4 Lenovo, Motorola Mobility discussion Rel-17 NR\_slice-Core Late

*Proposal 1: Serving cell broadcast slice support of serving and neighbor cells as part of “slice info”. Some signaling optimizations may be pursued in stage-3. FFS: If SIB3/ 4 or a new SIB should be used.*

*Proposal 2: RAN2 needs to discuss further online on the 2nd FFS (step 7).*

[R2-2107952](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107952.zip) Proposals for slice specific cell reselection solutions Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_slice-Core

*Proposal 2.1: RAN2 defines the "intended slices" as the slices that are considered during slice-based cell reselection.*

*Proposal 2.2: RAN2 assumes that NAS provides the slice information (slices to be considered during cell reselection, and the priorities of the slices) to AS. RAN2 should ask SA2/CT1 to confirm this assumption in an LS.*

*Proposal 2.3: RAN2 asks SA2/CT1 whether AS or NAS should map the individual slices to slice groups, which are used for cell reselection.*

[R2-2108497](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108497.zip) Discussion on the solutions for slice based cell reselection CMCC discussion Rel-17 NR\_slice

[R2-2107461](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107461.zip) Discussion on slice based cell reselection China Telecommunication, Baicells discussion Rel-17 NR\_slice-Core

[R2-2107466](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107466.zip) Cell reselection in RAN slicing FGI, Asia Pacific Telecom discussion

[R2-2107505](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107505.zip) Considerations on contents of slice related cell selection info KDDI Corporation discussion

[R2-2107929](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107929.zip) Discussion on slice-based cell reselection prioritization BT plc discussion Rel-17

[R2-2108292](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108292.zip) Slice grouping Ericsson discussion Rel-17 NR\_slice-Core

[R2-2107108](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107108.zip) Further discussion on slice specific cell reselection Qualcomm Incorporated discussion NR\_slice

[R2-2107243](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107243.zip) Considerations on slice based cell reselection Beijing Xiaomi Software Tech discussion Rel-17

[R2-2107383](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107383.zip) Discussion on Slice based Cell Reselection CATT discussion NR\_slice-Core

[R2-2107443](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107443.zip) Functional aspects of slice specific cell reselection Intel Corporation discussion Rel-17 NR\_slice-Core

[R2-2107592](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107592.zip) Slice based cell reselection under NW control Apple discussion Rel-17 NR\_slice-Core

[R2-2107705](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107705.zip) Discussion on slice based cell reselection LG Electronics UK discussion Rel-17

[R2-2107730](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107730.zip) Discussion on slice aware cell reselection ZTE corporation, Sanechips discussion Rel-17 NR\_slice-Core

[R2-2107739](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107739.zip) Consideration on slice-specific cell reselection OPPO discussion Rel-17 NR\_slice-Core

[R2-2108316](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108316.zip) On slice priority for cell reselection Samsung R&D Institute UK discussion

[R2-2108433](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108433.zip) Slice information provided by RRCRelease SHARP Corporation discussion Rel-17 [R2-2106087](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106087.zip)

*Withdrawn:*

[R2-2108315](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108315.zip) Considerations on slice-based cell reselection Lenovo, Motorola Mobility discussion Rel-17 NR\_slice-Core Withdrawn

Email discussions ([240])

* [AT115-e][240][Slicing] Reply LS to SA2 on band-specific slices in cell reselection (Nokia)

Scope:

* + - Draft reply LS to SA2 LS [R2-2106972](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106972.zip) ([S2-2105158](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_145E_Electronic_2021-05/Docs/S2-2105158.zip)).

 Intended outcome:

* + - Draft LS to SA2/CT1 in [R2-2108860](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108860.zip) (by email rapporteur).

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 1st week Thu, UTC 1000
		- Initial deadline (for final draft LS): 1st week Fri, UTC 0900

By Email (outcome of [240])

[R2-2108860](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108860.zip) [Draft] Reply LS on Cell reselection with band-specific network slices Nokia LS out Rel-17 NR\_Slice-Core To: SA2, RAN3

* [240] Can be approved, revised in [R2-2108867](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108867.zip) (remove “[Draft]” from name and use “RAN2” as source)

[R2-2108867](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108867.zip) Reply LS on Cell reselection with band-specific network slices RAN2 LS out Rel-17 NR\_Slice-Core To: SA2, RAN3

* [240] Approved

### 8.8.3 RACH

Including outcome of [Post114-e][252][Slicing] RACH partitioning details for slicing (CMCC)

Including discussion slice specific CBRA RACH for IDLE and INACTIVE mode. Slice-specific CBRA RACH for CONNECTED mode is deprioritized and will not be treated in this meeting.

NOTE: The common discussion on Rel-17 RACH partitioning will be discussed under AI 8.18. This AI will only consider RACH partitioning from slicing perspective.

Web Conf (Tuesday 1st week) (1+1)

Outcome of [Post114-e][252][Slicing] RACH partitioning details for slicing (CMCC)

[R2-2108504](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108504.zip) Report for [Post114-e][252][Slicing] RACH partitioning details for slicing CMCC discussion Rel-17 NR\_slice

* Revised in [R2-2108839](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108839.zip)

[R2-2108839](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108839.zip) Report for [Post114-e][252][Slicing] RACH partitioning details for slicing CMCC discussion Rel-17 NR\_slice

- LGE wants to discuss P1+2 together, P6, P8-10 in the general discussion.

- Xiaomi is fine with P3/5/7, but thinks P2 should be discussed with P1. May not need extra signalling for the mapping. For P6, we need to first discuss 2-step RA support and whether UE chooses 2-step and 4-step first.

- For P7, ZTE wonders will all slice-specific resources have the same TB size since 2-step RA has limited data size. CMCC thinks we can leave this to network implementation.

Bulk agreements

* 3 Network based solution is introduced to resolve the issue of prioritization parameter collision with MPS/MCS, i.e., Network indicates whether slice override MPS or MPS override slice.
* 5 For slice based RACH prioritization, RAN2 will stick to the current baseline parameters, i.e., scalingFactorBI and powerRampingStepHighPriority, and no additional parameters for this release.
* 7 Reuse the legacy threshold for the selection between 2-step and 4-step slice initiated RACH

Discussion (1+2)

- Apple wonders if P2 means UE-specific grouping. Thinks RAN-specific grouping should be common to all UEs. Thinks we need to tell SA2 about that. CMCC explains this was not discussed during email discussion. Apple thinks for cell reselection, everything should be cell-specific. QC thinks we can leave this to operator configuration.

- CATT thinks that gNB is not aware NAS signalling. OPPO agrees but thinks CN can indicate the information to gNB via network interface. Slice group would be common to all UEs. Thinks we should have common grouping for RACH and cell reselection.

- OPPO agrees with P1+2. QC also agrees.

- Ericsson thinks NAS signalling is problem for cell-specific signalling. thinks it's difficult to decide without resolving this. Apple thinks we can provide more information to SA2/CT1. QC thinks we could still wait for one meeting and discuss.

- CMCC thinks one slice can be mapped to one and only one group, which will avoid problems. Similar to broadcast NSSAI vs. S-NSSAI.

* 1 A new slice grouping mechanism is introduced for RACH configuration. One slice belongs to one and only one slice group. Slice groups are assumed to be only updated when UE does Registration Update.
* 2 Working assumption: The mapping between S-NSSAIs and slice groups should be configured to the UE through NAS signalling. Discuss problems for cell- vs. UE-specific signalling via post-meeting email discussion.
* [Post115-e][242][Slicing] Cell- vs. UE specific slice group signalling (Ericsson)

 Scope: Aim to understand issues with NAS signaling (which is UE-specific) since slice information should be common to all UEs in the same cell. Discuss if there are issues and attempt to resolve them. Focus on RACH aspects.Can have draft LS to SA2/CT1 (if needed)

 Intended outcome: report + draft LS (if needed)

 Deadline: Long

* 4 If no network indication is sent in case of slice prioritization parameter collision with MPS/MCS, it will be left to UE implementation.
* 8 It is RAN2 common understanding that 4-step common RACH needs to always be supported in initial BWP for legacy UE. And whether to configure 2-step slice specific RACH only or 4-step slice specific RACH only or both is left to network configuration.

*6 For RACH type selection, UE first selects between slice-specific and common RACH, then selects between 2-step and 4-step.*

*9 The following fallback case is supported:*

*– Fallback case 2: Fallback from 2-step slice specific RACH to 4-step common RACH, if 4-step slice specific RACH is not configured.*

*10 The following fallback cases are not supported in this release:*

*– Fallback case 1: Fallback from 4-step slice specific RACH to 4-step common RACH*

*– Fallback case 3: Fallback from 2-step slice specific RACH to 2-step common RACH, if neither 4-step slice specific RACH nor 4-step common RACH is configured.*

* 6, 9, 10 will be aligned to the common RACH partitioning discussion decisions

*[13/17] Proposal 1: A new slice grouping mechanism is introduced for RACH configuration.*

*[16/16] Proposal 2: The mapping between S-NSSAIs and slice groups should be configured to the UE through NAS signalling.*

*[16/18] Proposal 3: Network based solution is introduced to resolve the issue of prioritization parameter collision with MPS/MCS, i.e., Network indicates whether slice override MPS or MPS override slice.*

*[13/17] Proposal 4: If no network indication is sent in case of slice prioritization parameter collision with MPS/MCS, it will be left to UE implementation.*

*[17/17] Proposal 5: For slice based RACH prioritization, RAN2 will stick to the current baseline parameters, i.e., scalingFactorBI and powerRampingStepHighPriority, and no additional parameters for this release.*

*[15/18] Proposal 6: For RACH type selection, UE first selects between slice-specific and common RACH, then selects between 2-step and 4-step.*

*[15/17] Proposal 7: Reuse the legacy threshold for the selection between 2-step and 4-step slice initiated RACH*

*[11/18] Proposal 8: It is RAN2 common understanding that 4-step common RACH needs to always be supported in initial BWP for legacy UE. And whether to configure 2-step slice specific RACH only or 4-step slice specific RACH only or both is left to network configuration.*

*[15/17] Proposal 9: The following fallback case is supported:*

*– Fallback case 2: Fallback from 2-step slice specific RACH to 4-step common RACH, if 4-step slice specific RACH is not configured.*

*[13/17] Proposal 10: The following fallback cases are not supported in this release:*

*– Fallback case 1: Fallback from 4-step slice specific RACH to 4-step common RACH*

*– Fallback case 3: Fallback from 2-step slice specific RACH to 2-step common RACH, if neither 4-step slice specific RACH nor 4-step common RACH is configured.*

[R2-2108498](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108498.zip) Open issues for slice based RACH configuration CMCC discussion Rel-17 NR\_slice

*Proposal 1: The same new slice grouping mechanism is applied for both RACH configuration and cell reselection to address security and SIB payload size issues. The solutions of broadcasting SST and access category are not pursued.*

*Proposal 2: The mapping between S-NSSAIs and slice groups should be configured in NAS signalling during initial registration and mobility registration/TA update procedure.*

*Proposal 3: For the topic of prioritization parameters collision with MPS/MCS, it can be configurable by network, and if not configured, slice specific RA prioritization parameters should override MPS/MCS specific RA prioritization parameters.*

*Proposal 4: Case 3/6/8 in the table are valid from network configuration perspective..*

*Proposal 5: The UE should first select between slice specific RA and common RA, if both are configured.*

*Proposal 6: It’s acceptable to introduce a new RSRP threshold or reuse the legacy threshold for the selection between 2-step and 4-step slice-initiated RACH.*

*Proposal 7: The parameter msgA-TransMax can be configured differently per slice group.*

*Proposal 8: For the cases of fallback from slice specific RACH to common RACH, only fallback from 2-step slice specific RA to 4-step common RA is supported, if 4-step slice specific RA is not configured.*

*Proposal 9: RAN2 agree the fallback cases in the table 2. The changes are highlighted in yellow.*

|  |  |  |  |
| --- | --- | --- | --- |
|  | **RACH resource configuration in one BWP** | **RACH type selection for slice triggered access** | **Fallback after MSGA or MSG1 attempt number beyond threshold** |
| Case 1 | 2-step slice specific RACH4-step common RACH | Always perform 2-step slice specific RACH | Fallback to 4-step common RACH |
| Case 2 | 2-step slice specific RACH4-step slice specific RACH4-step common RACH | RACH type selection based on RSRP threshold | Fallback to 4-step slice specific RACHNo Fallback from 4-step slice specific RACH to 4-step common RACH |
| Case 3  | 4-step slice specific RACH2-step common RACH | Always perform 4-step slice specific RACH | No fallback  |
| Case 4 | 4-step slice specific RACH4-step common RACH | Always perform 4-step slice specific RACH | No fallback |
| Case 5 | 2-step slice specific RACH2-step common RACH4-step slice specific RACH4-step common RACH | RACH type selection based on RSRP threshold  | Fallback to 4-step slice specific RACH No Fallback from 4-step slice specific RACH to 4-step common RACH |
| Case 6  | 2-step slice specific RACH2-step common RACH | Always perform 2-step slice specific RACH | No Fallback |
| Case 7 | 2-step slice specific RACH2-step common RACH4-step common RACH | Always perform 2-step slice specific RACH | Fallback to 4-step common RACH |
| Case 8  | 4-step slice specific RACH2-step common RACH4-step common RACH | Always perform 4-step slice specific RACH | No Fallback from 4-step slice specific RACH to 4-step common RACH |

 *Proposal 10: The unified RACH configuration IEs can be added inside the current RACH-ConfigCommon and RACH-ConfigCommonTwoStepRA of SIB1, which indicate that the specific RACH resources for different WIs.*

[R2-2107109](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107109.zip) Further discussion on slice specific RACH Qualcomm Incorporated discussion NR\_slice

[R2-2107241](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107241.zip) Considerations on slice based RACH configuration Beijing Xiaomi Software Tech discussion Rel-17

[R2-2107384](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107384.zip) Analysis on slice based RACH configuration CATT discussion NR\_slice-Core

[R2-2107444](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107444.zip) Further considerations of slice based RACH Intel Corporation discussion Rel-17 NR\_slice-Core

[R2-2107506](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107506.zip) Slice-specific RACH configurations Nokia, Nokia Shanghai Bell discussion Rel-17 FS\_NR\_slice [R2-2105475](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105475.zip)

[R2-2107593](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107593.zip) Slice based RACH configuration Apple discussion Rel-17 NR\_slice-Core

[R2-2107714](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107714.zip) Slice specific RACH type selection Samsung discussion Rel-17 NR\_slice-Core [R2-2105345](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2105345.zip)

[R2-2107731](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107731.zip) Slice specific RACH resources and RACH prioritization ZTE corporation, Sanechips discussion Rel-17 NR\_slice-Core

[R2-2107740](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107740.zip) Consideration on slice-specific RACH OPPO discussion Rel-17 NR\_slice-Core

[R2-2108293](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108293.zip) RACH for RAN slicing enhancement Ericsson discussion Rel-17 NR\_slice-Core

[R2-2108555](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108555.zip) Discussion on slice based RACH configuration Huawei, HiSilicon discussion Rel-17 NR\_slice-Core

[R2-2108759](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108759.zip) Further discussion on slice-specific RACH LG electronics Inc. discussion Rel-17 NR\_slice-Core

## 8.20 Extending NR operation to 71GHz

(NR\_ext\_to\_71GHz-Core; leading WG: RAN1; REL-17; WID: RP-211584)

Time budget: 0.5

Tdoc Limitation: 2 tdocs

Note: RAN2 is to prioritize protocol support of RAN1 design and not on optimizations on items not discussed in RAN1

### 8.20.1 Organizational

Web Conf (Monday 2nd week) (2+1)

Rapporteur input, incoming LS etc.

[R2-2106917](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106917.zip) LS on how to introduce the 52.6-71GHz frequency range (R1-2106277; contact: Lenovo) RAN1 LS in Rel-17 NR\_ext\_to\_71GHz-Core To:RAN Cc:RAN2, RAN4

* Noted

[R2-2106954](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106954.zip) LS on RAN4 recommendation for the 52.6 - 71 GHz frequency range designation (R4-2107879; contact: Huawei) RAN4 LS in Rel-17 NR\_ext\_to\_71GHz-Core To:RAN Cc:RAN1, RAN2, RAN5

* Noted

[R2-2108476](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108476.zip) Workplan for Rel-17 WW Extending NR operation to 71GHz Qualcomm Incorporated, Intel Corporation Work Plan

* Noted

Work plan

|  |  |  |
| --- | --- | --- |
| *RAN2#115e* | *0.5* | * *Start discussion on impacts on higher layer to support of enhancements agreed by RAN1 and RAN4*
* *Start discussion on UE capability structure based on the RAN plenary guidance (See Note 5 above in the WID)*
* *With lower priority, start discussion any possible upper layer enhancement which can benefit operation above 51.6 Ghz.*
 |

### 8.20.2 General

RAN2 impact tech proposals.

Web Conf (Monday 2nd week) (1)

[R2-2107551](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107551.zip) RAN2 impact on extending NR operation to 71GHz Intel Corporation discussion Rel-17 NR\_ext\_to\_71GHz

Discussion

- Apple agrees to wait for RAN1 for RACH. For P6, RAN1 will also discuss HARQ RTT so that will impact RLC RTT as well. Fine to update the tables in 38.306. Lenovo thinks RAN1 already agreed these.

*Observation#1: RAN1 is discussing both the RO configuration and RA-RNTI/MsgB-RNTI together*

* 1: Wait for RAN1 to progress on the calculation of RA-RNTI/MsgB-RNTI issue
* 6: Depending on whether RAN1 introduces new SCS for data channels, RAN2 will capture the RLC RTT vales for SCS480kHz and 960kHz in the TS38.306 table on RLC RTT for NR cell group per SCS. FFS on the values (wait for RAN1 progress on L1 processing latency)

Discussion

- Intel explains that P2 is the general principle and we can wait with P3 until we get some capabilities.

- Nokia is fine with P2-3 as these seem to minimize the additional work. But wonders if FR2 refers to both FR2-1 and FR2-2 and we only use FR2-1/2 when there is need to disambiguate? Intel clarifies this was the intention.

- Huawei is fine with P2-3 but asks how the lower layer capabilities will be defined: If they are different for FR2-1 and FR2-2, how do we take that into account? Could be a lot of differentiation for new capabilities. Intel clarifies then we can have a different section for each FR2-x or indicate it clearly.

No FRx diff

* 2: An existing UE capability applicable to FR2 is also applicable to FR2-2, unless otherwise stated (i.e. in the field description of the UE capability that it is not applicable to FR2-2) in TS38.306,
* 3: If a new UE capability introduced for FR2-2 is also applicable to FR2-1 and/or FR1 and the UE capability is per band, this can be expressed in the field description of the UE capability.

Discussion

- Apple wonders what P5 means for new UE feature applicable to FR1/FR2-x: should it be made per-band (even if it exists already differently) or what does it mean? Intel clarifies that this is not necessarily changing existing capabilities. Should wait to see what RAN1 gives us as capabilities. Intent in RAN1 for shared spectrum was that everything is per-band, so this aligns with that.

- Samsung wonders if we can decide on these yet. Should wait to see the capabilities.

- Ericsson wonders if P4 and P5 are consistent. Shouldn't we replicate some as we did for shared spectrum? Intel clarifies that some capabilities were replicated. Can remove last part of the P4 sentence.

- For P5, Apple wonders if we will have new column or add notes? Intel clarifies this is still FFS.

- QC wonders if we are going to add "FR2-2-Diff" or do we continue per-band? Intel clarifies that per-band doesn't require anything.

FRx diff

* 4: For an existing UE capability already requires FR1-FR2 Diff and further differentiation between FR2-1 and FR2-2 is needed, the existing UE capability is replicated for FR2-2.
* 5: For UE capability that has to be per UE, “FR1-FR2 Diff” column can be used to express the need of the FRx differentiation (via the ‘Yes/No’ and also whether it needs FR2-1 and FR2-2 differentiation).
* Both 4 and 5 are taken as working assumption (can be revisited once we see the capabilities from RAN1/4)

[R2-2107476](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107476.zip) RRC impact due to FR2-1 and FR2-2 distinction Ericsson discussion Rel-17 NR\_ext\_to\_71GHz-Core

*Observation 1 As the carrier bandwidth for SCS-SpecificCarrier is defined in number of PRBs which scales with the SCS, no changes are expected to support the extended channel bandwidths.*

*Observation 2 Changes regarding inter-node RRC messages depend on the modifications that are specified for RRC messages exchanged between the gNB and the UE and can thus be discussed when stage-3 work has further progressed.*

*Proposal 1 For the common subcarrier spacing in MIB, clarify that subcarrier spacing is the same as that for the corresponding SSB.*

*Proposal 2 Use the spare values in the SubcarrierSpacing IE to introduce the new SCS values {480 kHz, 960 kHz}.*

*Proposal 3 For SCS field descriptions, clarify that 60 kHz and 120 kHz are applicable for FR2-1 (instead of FR2) and 120 kHz, 480 kHz, and 960 kHz are applicable for FR2-2.*

*Proposal 4 As new maximum bandwidths depending on the SCS configuration are introduced for FR2-2, corresponding fields (e.g. ReducedAggregatedBandwidth and SupportedBandwidth) that are defined in the unit of MHz need to be extended for FR2-2 to support bandwidths beyond 400 MHz. Details are left for Stage-3.*

*Proposal 5 Several FR2 related configurations, e.g. measurement reports/gaps, uplink (power) configurations, and UE capability information for CA, IAB, and SL, may be specific to FR2-2 and can wait for further RAN1/RAN4 progress.*

[R2-2107985](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107985.zip) FR2-2 considerations Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ext\_to\_71GHz-Core

[R2-2107255](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107255.zip) High layer impacts of beyond 52.6GHz OPPO discussion

[R2-2107266](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107266.zip) Analysis of RAN2 impacts of Ext 52-71GHz Huawei, HiSilicon discussion Rel-17 NR\_ext\_to\_71GHz-Core

[R2-2107267](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107267.zip) Discussion about capability issues for Ext 52-71GHz Huawei, HiSilicon discussion Rel-17 NR\_ext\_to\_71GHz-Core

[R2-2107475](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107475.zip) Aspects of CA operation and protocol impact Ericsson discussion Rel-17 NR\_ext\_to\_71GHz-Core

[R2-2108477](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108477.zip) Upper Layer impacts of extending NR operation to 71GHz Qualcomm Incorporated discussion Late

Web Conf (Monday 2nd week) (1)

UP impacts: RLC

[R2-2107964](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107964.zip) Impact of higher SCS on RLC operation Samsung discussion Rel-17

*Proposal 1: RAN2 to keep the current RLC timer values for NR operation with 480, 960 kHz SCS.*

*Proposal 2: RAN2 to keep the current RLC framework for NR operation over 52GHz in Rel-17.*

- Apple notes that this was earlier discussed but decided to wait for RAN1/4.

- Ericsson thinks P1 is fine but P2 can be discused without RAN1.

- ZTE wonders why RLC timers only here and not HARQ RTT? Samsung explains this is used in 38.306 for L2 buffer size and HARQ RTT depends on RAN1.

* As working assumption, RAN2 assumes no need to extend RLC timer values for NR operation with 480, 960 kHz SCS. Can be revisited when we get more information from RAN1/4.

[R2-2107963](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107963.zip) Discussion on RLC RTT and L2 buffer size Samsung discussion Rel-17

*Proposal 1: RAN2 to discuss adding RLC RTTs of 13, 8, 5ms for 240, 480, 960 kHz SCS respectively.*

Discussion

- Apple thinks we may not be able to keep the current L2 buffer definition. Depends on asymmetry of the used SCS. Would like to wait for now. QC wonders what we are waiting for? Apple thinks we can only assess the seriousness of L2 buffer when we know HARQ RTT.

- LGE wonders how serious problems will we have for L2 buffer? Samsung thinks that we could have large buffer size to prevent overflow, which may not be optimal but always works. But it will be a burden for UE implementation. QC also thinks current formula will give too large buffers since RTT will be based on FR1 even if UE uses FR2-2. Could think about that in RAN2.

* Wait for RAN1 before discussing L2 buffer size to see if we get prohibitively large buffer sizes.

*Proposal 2: RAN2 to keep the current L2 buffer size definition using RLC RTT corresponding to the smallest SCS numerology.*

*Proposal 3: RAN2 to have discussion on how to relax the burden on the UE L2 buffer size while keeping the current L2 buffer definition.*

Web Conf (Monday 2nd week) (1)

UP impacts: RACH

[R2-2107479](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107479.zip) Impact of high SCS on RA-RNTI calculation ZTE Corporation, Sanechips discussion

*Proposal 1: If 480kHz/960kHz PRACH SCS is supported, the following enhancement schemes for RA-RNTI may be considered:*

*- Option 1: Reusing Rel-15/16 RA-RNTI formula. Dividing the system frame into multiple segments and informing segment id transmitting preamble in DCI.*

*- Option 2: Changing t\_id range and the formula of RA-RNTI to use module according to PRACH SCS.*

*Proposal 2: if segment id is informed to the UE, only RARs with the same segment id may be multiplexed into one MAC PDU.*

[R2-2108745](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108745.zip) Consideration on potential RACH impact LG Electronics Inc. discussion Rel-17 NR\_ext\_to\_71GHz-Core

[R2-2107060](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107060.zip) Discussion on RA(MsgB)-RNTI Design for Beyond 52.6GHz vivo discussion NR\_ext\_to\_71GHz-Core

LBT impacts:

[R2-2108746](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108746.zip) Consideration on potential LBT impact LG Electronics Inc. discussion Rel-17 NR\_ext\_to\_71GHz-Core

*Observation 1. As all options in RAN1 discussion assume per beam LBT, RAN2 can expect per beam LBT would be introduced in Rel-17.*

*Observation 2. The current LBT failure detection and recovery procedure is designed based on omni-directional LBT.*

*Observation 3. To determine RAN2 impact by per beam LBT, more detailed RAN1 behaviour should be determined first.*

*Proposal 1. To identify clear RAN2 impacts by per beam LBT, RAN2 wait for RAN1 progress on per beam LBT or send LS to RAN1 to ask clear UE behaviour when one of multiple beams fails LBT.*

[R2-2107480](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107480.zip) RAN2 impact for LBT for operation up to 71 GHz ZTE Corporation, Sanechips discussion

[R2-2107061](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107061.zip) Discussion on Consistent LBT Failure Detection for Beyond 52.6GHz vivo discussion NR\_SmallData\_INACTIVE-Core

IDC impact due to WiGig:

[R2-2107792](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107792.zip) In-device coexistence for NR above 52.6GHz Charter Communications, Inc discussion

*Observation: Extending NR operation to 52.6-71 GHz introduces new IDC issues with IEEE 802.11ad/ay.*

*Proposal 1: Extend IDC Assistance signalling in Rel-17 to include WiGig as a victim system type.*

# 9 Rel-17 EUTRA Work Items

## 9.3 EUTRA R17 Other

Time budget: 0 TU

Tdoc Limitation: No limitation but the AI may be entirely deprioritized depending on available time.

Email max expectation: 1 thread

TEI17 documents can be submitted under this agenda

Web Conf (Friday 1st week) (1)

[R2-2106930](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106930.zip) Reply LS to LS on User Plane Integrity Protection for eUTRA connected to EPC (R3-212812; contact: Qualcomm) RAN3 LS in Rel-17 To:SA3, RAN2, CT1, CT4, SA2

* Noted (consistent with earlier RAN2 decision)

Web Conf (Friday 1st week) (8+1+1+1)

Event-triggered logged MDT enhancement (new but submitted earlier, postponed):

[R2-2107214](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107214.zip) Introduction of event-based trigger for LTE MDT logging KDDI Corporation, CMCC, Telecom Italia, Samsung, Ericsson draftCR Rel-17 36.331 16.5.0 B TEI17

*(moved from 8.21.2)*

* Revised in [R2-2109027](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2109027.zip)

[R2-2107215](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107215.zip) Introduction of event-based trigger for LTE MDT logging KDDI Corporation, CMCC, Telecom Italia, Samsung, Ericsson draftCR Rel-17 37.320 16.5.0 B TEI17

*(moved from 8.21.2)*

* Revised in [R2-2109028](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2109028.zip)

[R2-2109027](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2109027.zip) Introduction of event-based trigger for LTE MDT logging KDDI Corporation, CMCC, Telecom Italia, Samsung, Ericsson, China Unicom draftCR Rel-17 36.331 16.5.0 B TEI17

[R2-2109028](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2109028.zip) Introduction of event-based trigger for LTE MDT logging KDDI Corporation, CMCC, Telecom Italia, Samsung, Ericsson, China Unicom draftCR Rel-17 37.320 16.5.0 B TEI17

*This CR is to introduce event-based trigger function for MDT logging, which has not yet standadized for LTE. The function supports two types of event, outOfCoverage and eventL1 same as NR.*

[R2-2108556](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108556.zip) Discussion on event triggered logged MDT for LTE Huawei, HiSilicon discussion Rel-17 TEI17 [R2-2106144](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106144.zip)

*Proposal 1: UEs should inform the network whether it supports event triggered MDT or not.*

Discusssion

- Huawei supports the proposal but thinks capability is needed. Lenovo, Apple, QC and Ericsson agree. CUC is fine with this.

- QC is fine with in principle this but would like to understand how the proposal works. Thinks we need to discuss more if this is enough to determine the LTE coverage holes.

- LGE supports but wonders if L1 logging is necessary for LTE since there are no beams? Ericsson explains it's not about beams but A2-event in CONNECTED.

* Clear support but need to discuss more details (including whether this is sufficient). If we agree to the proposal, UE capability is needed.
* Further details discussed in post-meeting email discussion (Qualcomm)
* [Post115-e][203][TEI17] Event triggered logged MDT for LTE (Qualcomm)

 Scope: Discuss the details of event-triggered logged MDT for LTE (i.e. how it would work) and draft CRs accordingly.

 Intended outcome: Report + draft CRs

 Deadline: Long

[R2-2108557](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108557.zip) CR to 36.306 on event triggered logged MDT for LTE Huawei, HiSilicon draftCR Rel-17 36.306 16.5.0 B TEI17

[R2-2108558](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108558.zip) CR to 36.331 on event triggered logged MDT for LTE Huawei, HiSilicon draftCR Rel-17 36.331 16.5.0 B TEI17

[R2-2108559](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108559.zip) CR to 37.320 on event triggered logged MDT for LTE Huawei, HiSilicon draftCR Rel-17 37.320 16.5.0 B TEI17

[R2-2108560](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108560.zip) CR to 36.304 on event triggered logged MDT for LTE Huawei, HiSilicon draftCR Rel-17 36.304 16.4.0 B TEI17

Positioning information enhancements to logged MDT (new)

[R2-2108596](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108596.zip) Introduction of sensor-LocationInfo for LTE MDT KDDI Corporation discussion

*(moved from 8.21.2)*

- Chair wonders if this is the same as in NR? KDDI clarifies it is.

- QC thinks UAV introduced height reporting but didn't add barometric pressure. How UE determines the height was left up to UE. Doesn't think this is really needed. LGE agrees.

- KDDI clarifies that barometric pressure is used for normal UEs and not UAVs to investigate coverage, e.g. UEs inside buildings.

*Proposal: RAN2 agree to develop a CR to introduce Sensor Location Information to LTE.*

* Not enough support
* Noted

EDT enhancements (new):

[R2-2107125](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107125.zip) UE specific DRX during EDT Qualcomm Incorporated discussion Rel-17 TEI17

*Observation 1: The current EDT procedure can lead to higher power consumption when server response is slow.*

*Proposal 1: RAN2 discuss reducing power consumption for EDT procedure by increasing PDCCH monitoring periodicity after contention resolution completion without RRC message.*

*Proposal 2: RAN2 discuss introducing longer (M/N)PDCCH periods to use between completion of contention resolution and reception of MSG4.*

*Proposal 3: RAN2 discuss whether to use implicit or explicit indication to command UE to use extended PDCCH periods after successful contention resolution completion without any RRC message.*

- Lenovo thinks we can discuss but since we don't know the solutions, it's difficult to comment. Would like to see solution first. Huawei agrees and thinks this proposal may not be needed. Nokia is not sure how much this benefits energy consumption. Network configuration can be modified instead and there are no latency requirements for NB-IoT.

- Qualcomm clarifies that they wanted to discuss before going for a solution. Thinks network configuration would impact also legacy UEs. Power consumption is affected by PDCCH monitoring as the time can be long (up to 120s).

- Ericsson wonders what the impact of UE power consumption in CONNECTED is. Normally it's a minor part since IDLE dominates. So do we gain anything? Qualcomm thinks this depends on how often EDT is used. If it's used every 20 minutes, it can make a difference.

* Not enough support for now, should clarify the solution. Can resubmit to next meeting.
* Noted

RSSI/CO measurement capability in LTE for NR-U (basic intent agreed during RAN2#113e in NR session):

[R2-2107589](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2107589.zip) Adding NR-U RSSI/CO measurement UE capability into LTE Apple discussion Rel-17 DUMMY

*(moved from 8.21.2)*

*Proposal 1: To adopt the change in Annex to TS36.331 and TS36.306, in order to add the per band NR-U RSSI/CO measurement UE capability.*

- Lenovo thinks we can take NR session conclusion into account but wonders why the capability would be per-band and why the CR uses per-UE? Apple agrees the CR doesn't match the per-band.

- Chair wonders why UE capability would be per-band and not per-UE? Apple explains this matches how NR capabilities were defined.

- Nokia would like to clarify what is the problem if we don't have this CR? How is UE or NW impacted? Apple clarifies this helps network to know what UE supports and we don't have this capability for eNB, only for gNB.

* Can consider this based on CRs submitted to next meeting.
* Noted

## 9.4 NR and EUTRA Inclusive language

Time budget: N/A

CRs were endorsed/agreed-in-principle at R2#112-e. Final approval is expected when R17 TSes are to be created and at that point CRs need to be updated towards latest TS version and submitted again. Meanwhile this AI can be used to cover missing part, if any, and for correction/modification of the endorsed/agreed-in-principle CRs e.g. for inter-group consistency, inter-group review etc. There may be a consistency review activity organized at R2#115-e, where the rapporteurs of impacted TSes are expected to participate (TBD). RAN coordinator for inclusive language is Gino Masini (Ericsson).

Web Conf (Friday 1st week) (1+1)

[R2-2106981](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2106981.zip) LS on Inclusive language for ANR (S5-213683; contact: Ericsson) SA5 LS in Rel-17 To:RAN3, RAN2

* Noted

[R2-2108297](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108297.zip) Inclusive Language Review Status and Consistency Check Ericsson (coordinator) discussion Rel-17

Proposal 1 Specification Rapporteurs should consider the above, including the findings in Table 1, in their review activity, aiming toward an optimal alignment across WGs where possible, and coordinating as needed.

Discussion

- Ericsson thinks that RAN groups are aligned well. SA5 is not exactly but not precisely using the same. QC is not sure whether we need to coordinate between SA and RAN.

- Huawei thinks SA5 refers to some SIB parameters where we use exclude-list and SA5 uses block-list. Prefers SA5 aligns with us. Ericsson thinks they refer to some UTRAN lists as well. Thinks cross-TSG coordination is not yet done in SA/CT but only in RAN.

* Inform SA5 that RAN2 has used different terminology and RAN2 would prefer that SA5 aligned to us. Ask if there are issues if this is not done across TSGs.
* Include also CT and SA so they are aware of the inconsistency. Can discuss if we ask them to take further actions.
* Reply LS drafted in email discussion [202] (Ericsson)

Email discussions ([202])

* [AT115-e][202][LTE/NR] Inclusive language (Ericsson)

Scope:

* + - Draft LS (To: SA5, RAN3, CT, SA; Cc: RAN) according to RAN2 decisions on inclusive language alignment between WGs and TSGs

 Intended outcome:

* + - Agreeable LS in [R2-2108853](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108853.zip)

 Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 2nd week Thu, UTC 0900
		- Deadline for final LS: 2nd week Thu, UTC 1200

By Email (outcome of [202])

[R2-2108853](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108853.zip) [Draft] Reply LS on Inclusive language for ANR Ericsson LS out Rel-17 TEI17 To: SA5, RAN3, CT, SA Cc: RAN

* [202] Can be approved, revised in [R2-2108869](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108869.zip) (remove “[Draft]” from name and use “RAN2” as source)

[R2-2108869](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108869.zip) Reply LS on Inclusive language for ANR RAN2 LS out Rel-17 TEI17 To: SA5, RAN3, CT, SA Cc: RAN

* [202] Approved

# Summary

**Agreed CRs (2+1)**

*LTE legacy (Rel-16 and earlier, except for LTE Rel-16 mobility) - 2 CRs (both for 36.331)*

[R2-2108866](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108866.zip) Minor changes collected by Rapporteur Samsung (rapporteur) CR Rel-15 36.331 15.14.0 4718 1 F LTE\_eMTC4-Core, LTE\_sTTIandPT, LTE-L23 [R2-2108634](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108634.zip)

[R2-2108867](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108867.zip) Minor changes collected by Rapporteur Samsung (rapporteur) CR Rel-16 36.331 16.5.0 4719 1 A A LTE\_eMTC4-Core, LTE\_sTTIandPT, LTE-L23, TEI16, LTE\_eMTC5-Core, NB\_IOTenh3-Core, NR\_newRAT-Core [R2-2108635](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108635.zip)

*Rel-16 LTE mobility - 1 CRs (for 36.331)*

[R2-2108854](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108854.zip) 36.331 Correction on ReportConfigEUTRA for CHO/CPAC CATT CR Rel-16 36.331 16.5.0 4720 1 F LTE\_feMob-Core [R2-2108701](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108701.zip)

**Endorsed documents (0)**

***(None)***

**Postponed documents (0)**

***(None)***

**Approved LS out (4)**

[R2-2109215](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2109215.zip) Reply LS on inter-node message design for CPAC busy indication RAN2 LS out Rel-17 LTE\_NR\_DC\_enh2-Core To: RAN3

[R2-2108855](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108855.zip) Reply LS on NAS-based busy indication RAN2 LS out Rel-17 LTE\_NR\_MUSIM-Core To:SA2, RAN3 Cc:SA3, CT1

[R2-2108867](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108867.zip) Reply LS on Cell reselection with band-specific network slices RAN2 LS out Rel-17 NR\_Slice-Core To: SA2, RAN3

[R2-2108869](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108869.zip) Reply LS on Inclusive language for ANR RAN2 LS out Rel-17 TEI17 To: SA5, RAN3, CT, SA Cc: RAN

**Post-meeting email discussions (short) (1)**

* [Post115-e][235][MUSIM] LS to RAN4 on gap handling for MUSIM (vivo)

 Scope: Draft LS to RAN4 (CC:RAN) on gap handling and request feedback on RAN2 agreements. Can ask about gap cycle and duration for all gap types and whether these have impact to RAN4.

 Intended outcome: approved LS (in [R2-2108861](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_115-e/Docs/R2-2108861.zip))

 Deadline: Short

**Post-meeting email discussions (long, running CRs) (6+4+4)**

* [Post115-e][210][R17 DCCA] Running Stage-2 CRs for CPAC (CATT)

Scope: Updated running 37.340 CR for CPAC. Should also discuss if we have a new section for the CPAC procedures.

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][211][R17 DCCA] Running NR/LTE RRCs CR for CPAC (CATT)

Scope: Create running NR and LTE RRC CRs for CPAC.

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][212][R17 DCCA] Running NR/LTE RRCs CR for SCG deactivation (Huawei)

Scope: Create running NR and LTE RRC CRs for SCG deactivation.

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][213][R17 DCCA] Running MAC CR for SCG deactivation (vivo)

Scope: Create running MAC CR for SCG deactivation.

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][214][R17 DCCA] UE capabilities (Intel)

Scope: Discuss which (RAN2-determined) UE capabilities (for all features in this WI) are needed

 Intended outcome: Report

 Deadline: Long

* [Post115-e][215][R17 DCCA] Running Stage-2 CRs for SCG deactivation (ZTE)

Scope: Create running 37.340 CRs for SCG deactivation.

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][231][MUSIM] Running NR RRC CR for MUSIM (vivo)

Scope: Create running NR RRC CR for MUSIM

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][232][MUSIM] Running LTE RRC CR for MUSIM (Samsung)

Scope: Create running LTE RRC CR for MUSIM

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][233][MUSIM] Running 36.304 /38.304 CRs for MUSIM (China Telecom)

Scope: Create running 36.304 and 38.304 CRs for MUSIM

 Intended outcome: Running CRs

 Deadline: Long

* [Post115-e][234][MUSIM] Running Stage-2 CRs for MUSIM (Ericsson)

Scope: Create running Stage-2 CRs (36.300, 38.300 and/or 37.340) for MUSIM

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][244][Slicing] Running NR RRC CR for RAN slicing (Huawei)

Scope: Create running NR RRC CR for RAN slicing based on agreements

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][245][Slicing] Running 38.304 CR for RAN slicing (CMCC)

Scope: Create running 38.304 CR for RAN slicing based on agreements

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][246][Slicing] Running Stage-2 CRs for RAN slicing (Nokia)

Scope: Create running Stage-2 CRs (38.300 and/or 37.340) for RAN slicing based on agreements

 Intended outcome: Running CR

 Deadline: Long

* [Post115-e][247][Slicing] Running MAC CR for RAN slicing (OPPO)

Scope: Create running 38.321 CR for RAN slicing based on agreements (avoid overlap with general RACH partiotioning)

 Intended outcome: Running CR

 Deadline: Long

**Post-meeting email discussions (4 weeks) (1)**

* [Post115-e][241][Slicing] Slice list and priority information for cell reselection (Lenovo)

 Scope: Ask SA2/CT1 (CC: SA1) if it is alright for AS to expect to receive slice list as well as slice priority information from NAS for cell (re)selection. Ask about both slices and slice groups and explain what "slice list" is.

 Intended outcome: approved LS

 Deadline: 4 weeks

**Post-meeting email discussions (long) (1+4+1+2)**

* [Post115-e][203][TEI17] Event triggered logged MDT for LTE (Qualcomm)

 Scope: Discuss the details of event-triggered logged MDT for LTE (i.e. how it would work) and draft CRs accordingly.

 Intended outcome: Report + draft CRs

 Deadline: Long

* [Post115-e][216][R17 DCCA] Inter-node message design (Ericsson)

Scope: Discuss details of inter-node messages for CPAC and provide draft CR of the resulting option(s).

 Intended outcome: Draft CR

 Deadline: Long

* [Post115-e][217][R17 DCCA] Support of A3/A5 for inter-SN CPC (Ericsson)

 Scope: Draft CRs that show how the support of A3/A5 events would be done for inter-SN CPC to assess the complexity of the feature. Can also discuss the gains from the functionality.

 Intended outcome: report + draft CRs

 Deadline: Long

* [Post115-e][218][R17 DCCA] TRS-based SCell activation (OPPO)

Scope: Discuss RAN2 impacts of TRS-based SCell activation and attempt to draft initial CRs to RRC/MAC to understand the scope.

 Intended outcome: Report + draft CR to MAC/RRC

 Deadline: Long

* [Post115-e][219][R17 DCCA] UE-initiated SCG activation (Huawei)

 Scope: Discuss the detauils of UE-initiated SCG activation and whether we need it. Shuld clarify technical aspects.

 Intended outcome: report

 Deadline: Long

* [Post115-e][236][MUSIM] Paging with service indication (Huawei)

 Scope: Discuss remaining open issues for paging with service indication and try to have draft CRs to illustrate the necessary modifications to specifications. Can discuss which specifications are affected. Can also discuss AS/NAS interactions with paging cause.

 Intended outcome: report + draft CRs

 Deadline: Long

* [Post115-e][242][Slicing] Cell- vs. UE specific slice group signalling (Ericsson)

 Scope: Aim to understand issues with NAS signaling (which is UE-specific) since slice information should be common to all UEs in the same cell. Discuss if there are issues and attempt to resolve them. Focus on RACH aspects.Can have draft LS to SA2/CT1 (if needed)

 Intended outcome: report + draft LS (if needed)

 Deadline: Long

* [Post115-e][244][Slicing] Resolving solution 4 FFs (Lenovo)

      Scope: Attempt to resolve solution 4 FFSs, including understanding if there are any impacts to RAN4 requirements. Can draft LS to RAN4 in case any potential impacts are identified.

      Intended outcome: report + draft LS to RAN4 (if needed)

      Deadline:  Long